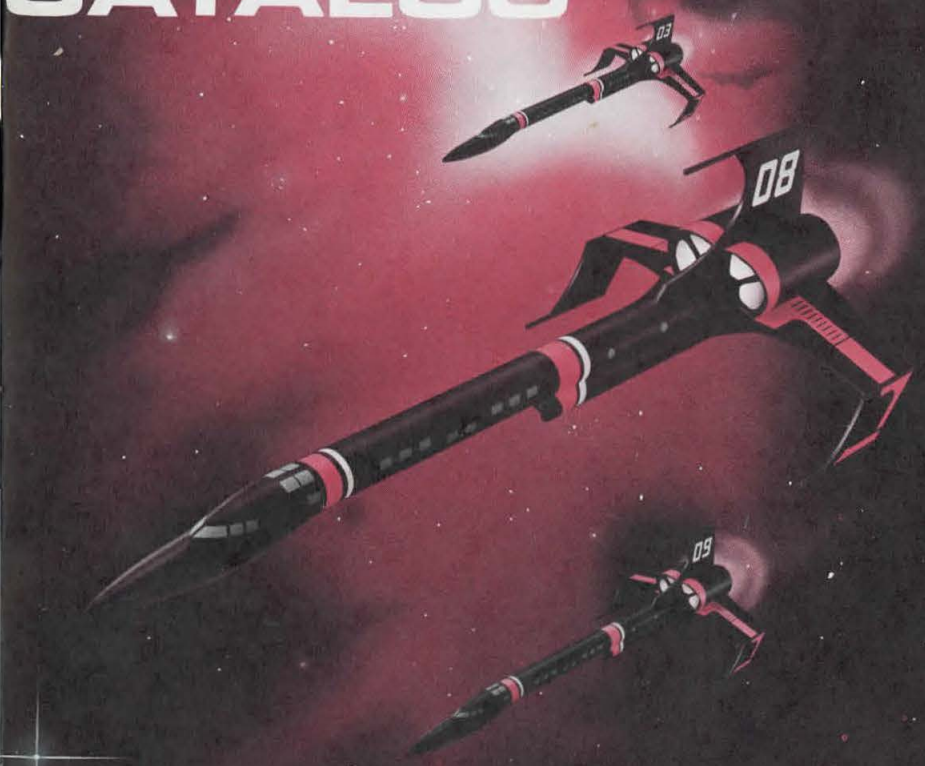
ESTES

A DAMON COMPANY

1981 FLYING MODEL ROCKET CATALOG



INSIDE!
More Than 100 Exciting Flying Model Rockets.

No. 811P/CM *Starship Nova featured on page 38.* **75¢**

ESTES

A DAMON COMPANY

BLAST-OFF FLIGHT PAK

NEW!

SUPER VALUE!

$21.80 VALUE

Ideal Engine Assortment For The Active Rocketeer. Features 24 of The Most Popular Estes Model Rocket Engines, plus Solar Igniters and Parachute Recovery Wadding. Priced At An Excellent Savings.

Includes:
Six 1/2A6-2 High Performance Model Rocket Engines
Six A8-3 High Performance Model Rocket Engines
Six B6-4 High Performance Model Rocket Engines
Six C6-5 High Performance Model Rocket Engines
30 Solar Igniters
One Pkg. Parachute Recovery Wadding

SAVE $6.81

No. 1672 **ONLY $14.99**

Free Roll Of 110 Color Print Film WORTH $2.50 When You Purchase The AstroCam 110 Aerial Camera #1327
See Bonus Coupon on Page D

SAVE $2.50 or receive a "FREE" NOMAD SURFACE TO SURFACE MISSILE **Nearly 4' Long!**

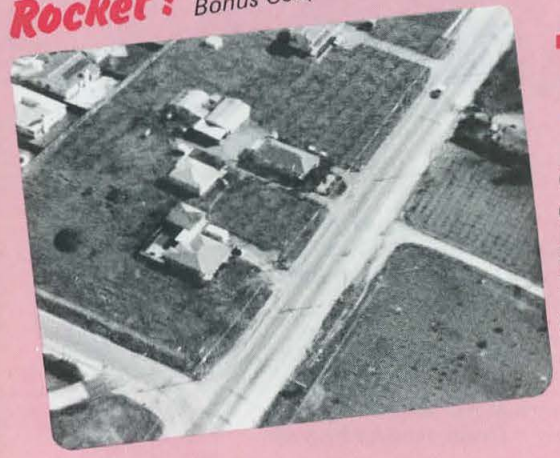
SAVE $1.00 on EACH MEMBERSHIP
See Special Coupon on Back

(worth $5.50) with your next order over $17.50
See Bonus Buck on Back

Receive A Free Roll Of Kodak Kodacolor 110 Color Print Film (ASA 400) When You Purchase The Incredible AstroCam 110 Aerial Camera With Delta II Rocket! (#1327) See The Bonus Coupon Below.

ESTES ASTROCAM 110™ WINNERS

AERIAL PHOTO CONTEST...



1st Place

Stuart Swan of San Jose, California won a fabulous all expense-paid trip for four to Disneyland . . . for 3 days and 2 nights. This is his AstroCam 110 photo that won the Grand Prize.

David Moosa
Eunice, LA

Herb Desind
Silver Spring, MD

Scott Phillips
Toledo, OH

2nd Place

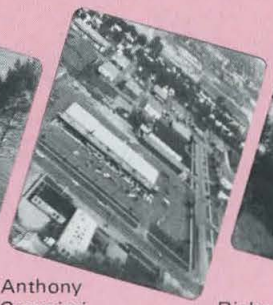
Ten Second Place runners-up won sleek, new LaTrax Cobra radio-controlled cars.

3rd Place

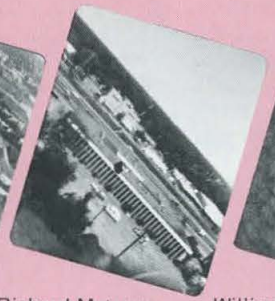
Twenty-Nine Third Place runners-up won $25.00 Estes Merchandise Certificates.

Richard Bookbinder
Beechhurst, NY

Ralph Robinson
Pueblo, CO



Anthony Guarnieri
Warren, MI



Richard Metzger
Houston, TX

William A. Roskey
Columbia, MD

Other Second and Third Place Runners-Up.

SECOND PLACE
Scott Pearce
West Chester, PA

Arthur E. Nestor
Zelienople, PA

Gerald Hosek
Rockford, IL

Brent Miller
Manhattan Beach, CA

Larry Sloan
West Chester, PA

John M. Skelton
Independence, MO

Jon Waxham
Laurel, MD

THIRD PLACE
Scott Hardy
Harrisonburg, VA

Wayne Nelson
Brookings, SD

Ray Buteux
Suffern, NY

Paul Anderson
Abbotsford, BC, Canada

Francis Ruzicka
Willard, MO

Mike Clary
Orange, CA

Gary Moore
Garden Grove, CA

Andy Cohen
Chatsworth, CA

Paul Wilkin
Holley, NY

Michael Borders
Pueblo, CO

Bret Bahe
Dexter, KS

Garren Alldredge
Oak City, UT

George Misadoques
Naugatuck, CT

John Dietrich
Painesville, OH

Jeff Cooper
New Oxford, PA

Kurt Bentz
Calgary, AB, Canada

Steven Katz
Laurel, MD

Dale Brown
Greybull, WY

Max Bauer
El Cajon, CA

John Menk
Brenham, TX

Eddie Richardson
Laurel, MD

Don Kelly
Oromocto, NB, Canada

Owen Wallen
Ft. Collins, CO

Ralph Wagner
Escanaba, MI

ESTES #7727 **Bonus Coupon**

FREE Roll of 110 Color Film (#2720) Worth $2.50

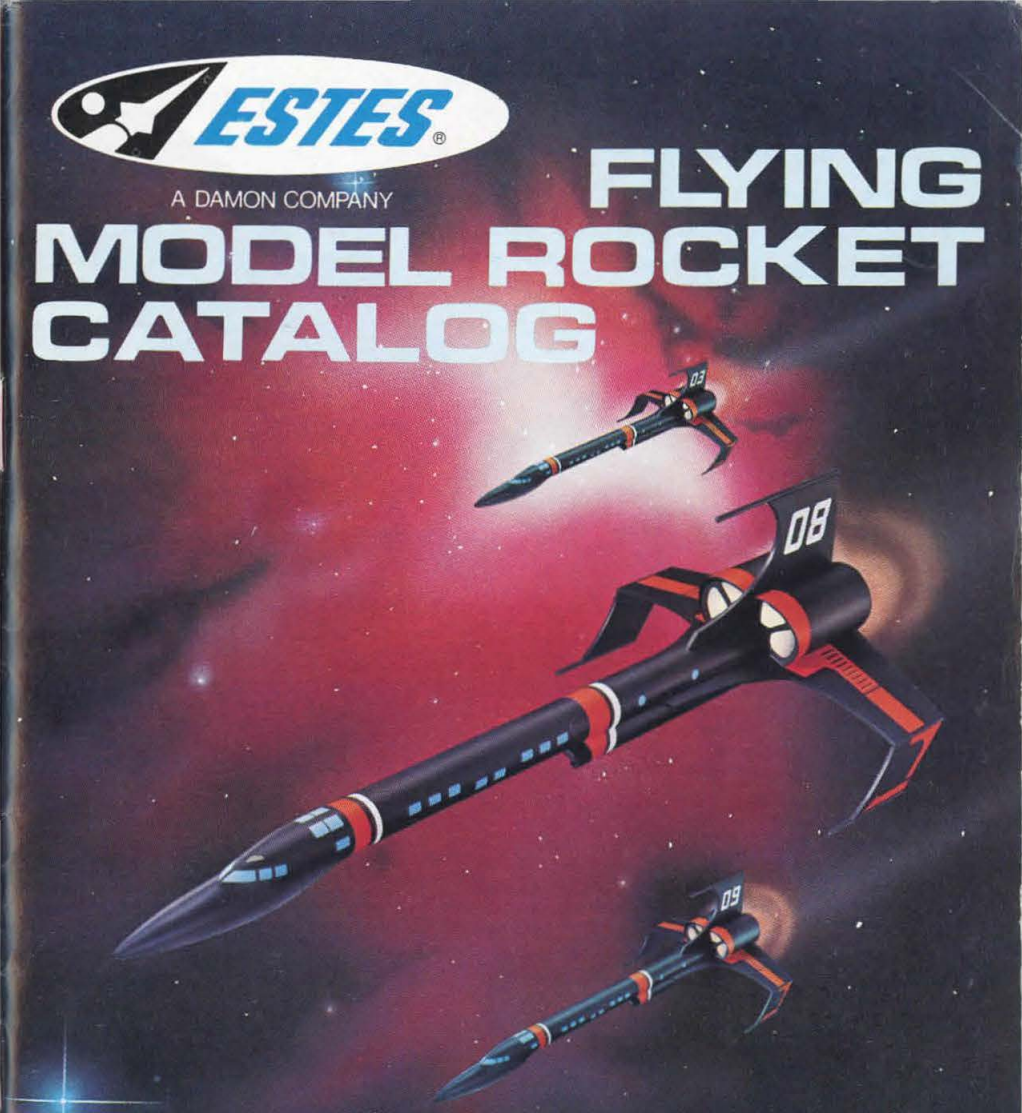
when you purchase an AstroCam 110 Aerial Camera with Delta II Rocket (#1327)

(See Page 2 of 1981 Estes Catalog.) Exp. 8-1-'81

ESTES®

A DAMON COMPANY

FLYING MODEL ROCKET CATALOG



INSIDE!
More Than 100 Exciting Flying Model Rockets.

Consumer Catalog

No. 811P

Starship Nova featured on page 38.

75¢

ESTES ASTROCAM 110™

Aerial Camera with Delta II Launch Vehicle

Actual "AstroCam 110" photo of Three Mile Island Facility, Middletown, Pa. Taken by Scott Pearce, Westchester, PA.

SKILL LEVEL 2

YOU CAN EXPERIENCE THE THRILL AND EXCITEMENT OF TAKING INCREDIBLE COLOR, PHOTOGRAPHS FROM HUNDREDS OF FEET IN THE SKY. As your rocket reaches apogee and begins its descent to Earth, the ejection charge of your rocket engine trips the AstroCam 110's 1/500th sec. shutter and "snap" . . . you have just taken a dramatic aerial photograph from far above. The "new" AstroCam 110 uses high speed Kodak Kodacolor 110 color print film ASA 400 or equivalent (not included). Film and developing are available locally.

Special features include easy, quick-assembly, high quality acrylic lens, molded plastic housing, glass first surface mirror, and high performance aerodynamic design for minimum drag and maximum altitude. Simple to operate and shoots one, crisp, clear, full-color 110 photo per flight.

Delta II launch vehicle features specially designed, pre-colored plastic fin-unit for consistently smooth and stable flights. Plus white body tube, quick-release engine mount and great looking, two-color kit decals with dual roll patterns. No painting required! Returns to Earth via 12" dia. parachute. **Specifications - Camera with Launch Vehicle:** Length: 19.1" (49 cm) Dia. 1.34" (34 mm) Fin Span 4.75" (12 cm) Wt. 3.75 oz. (106 g) Ship. Wt. 14 oz.

Film and Developing Available Locally!

Take Incredible "Color" Photos From Hundreds of Feet In The Sky!

Camera Specifications:
Length: 6.5" (16.5 cm)
Dia. 1.39" (35.3 mm)
Wt. 1.36 oz. (38.5 g) (Without film)
Wt. 1.76 oz. (50 g) (With film)

ENGINES: B8-5 B8-7 B14-5 B14-7 C6-5 C6-7 (1st Flt.)

No. 1327

ONLY $20.00

(Launch System, engine, glue, and film are not included.)

Welcome To Model Rocketry!

Vern and Gleda Estes

This will be a year of renewed interest in space science and planetary exploration as the United States launches the Space Shuttle on its first orbital flight. Already Americans have thrilled to the excitement of close-up pictures of the moons and rings of Saturn — and there's more to come. Just when you think we've done it all, the endless reaches of deep space bring ever-new challenges to man.

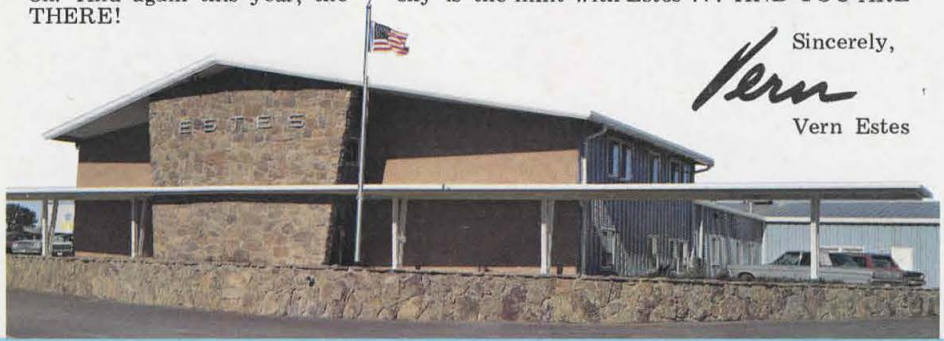
Estes launches into this exciting year with 23 new products, including our first exotic Starter Outfit featuring the dramatic Falcon Commander spacecraft. Estes rocketeers will be able to follow their own space program and join in this national spirit of scientific exploration.

It's a small world . . . but a vast universe . . . and the adventures of space go on and on. And again this year, the sky is the limit with Estes . . . AND YOU ARE THERE!

Sincerely,

Vern

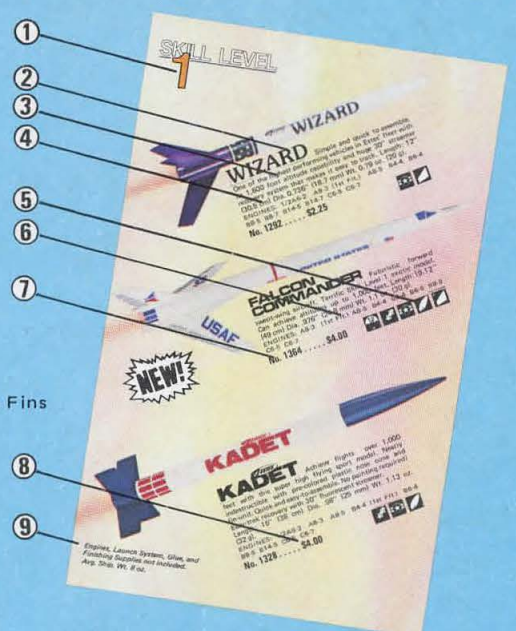
Vern Estes



Here's How To Use Your Estes Catalog.

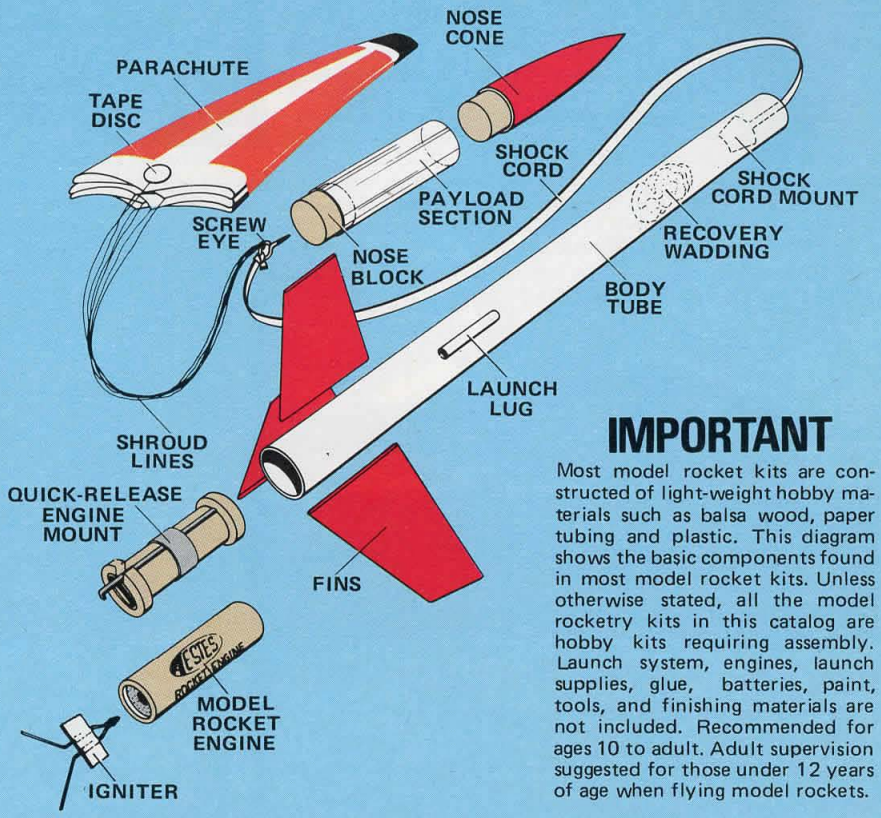
1. Skill Level number recommends the general skill and experience necessary for a rocketeer to successfully complete the kit. Skill Level 1 kits are suggested for beginners, Skill Level 2 for intermediate rocketeers, and so on to Skill Level 5, Expert Rocketeer. All kits in this catalog are grouped by Skill Level.
2. Name of the kit.
3. Special features and additional kit information.
4. Specifications including length, diameter, and weight, in both English and Metric Equivalents.
5. Kit Feature Symbols indicate the following kit features:

6. Engine Types lists all recommended engines for flying the rocket. Engines are listed from least powerful to most powerful. Also, indicates which engine should be used for the first flight.
7. Product number for kit which should always be used when ordering.
8. Price of the kit. (Or see Price List.)
9. Average Shipping Weight for these models.



All prices in this catalog are subject to change without notice.

Parts of a Model Rocket



IMPORTANT

Most model rocket kits are constructed of light-weight hobby materials such as balsa wood, paper tubing and plastic. This diagram shows the basic components found in most model rocket kits. Unless otherwise stated, all the model rocketry kits in this catalog are hobby kits requiring assembly. Launch system, engines, launch supplies, glue, batteries, paint, tools, and finishing materials are not included. Recommended for ages 10 to adult. Adult supervision suggested for those under 12 years of age when flying model rockets.

Skill Levels

SKILL LEVEL 1 — Very Simple - Recommended for beginners

SKILL LEVEL 2 — Fairly Easy - Recommended for individuals with some model building experience.

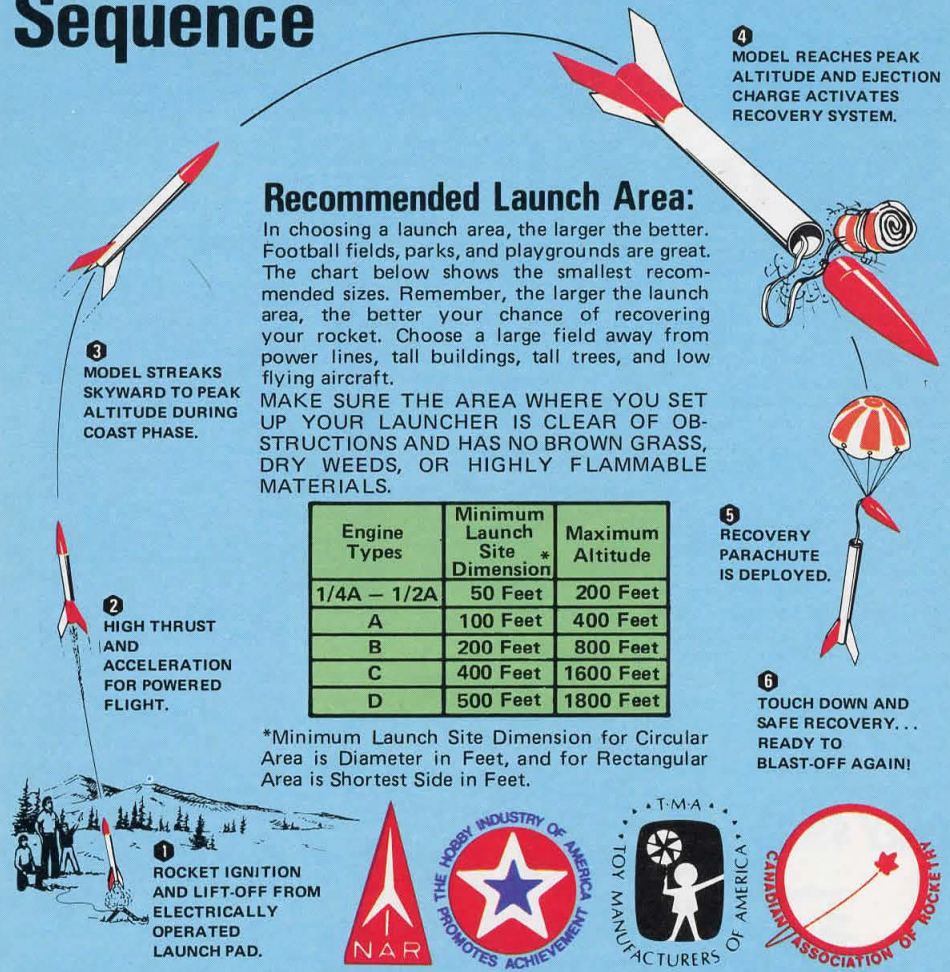
SKILL LEVEL 3 — Average Challenge - Recommended for the experienced model builder.

SKILL LEVEL 4 — Very Challenging - Recommended for the advanced model builder.

SKILL LEVEL 5 — Extremely Challenging - Recommended for the expert model builder.

All model rocket kits in this catalog require assembly unless otherwise stated. Some of these flying model rockets can be put together and ready to launch in minutes. Others with their sophisticated aerodynamics and wealth of detail are more challenging. The Skill Level numbers given on each page recommend the skills and experience necessary for a rocketeer to successfully complete the kits listed. Generally speaking, it is not wise to jump skill levels. Unless you are an extremely experienced modeler, you should complete a kit of Skill Level 1 before attempting Skill Level 2 . . . and you should build a Skill Level 2 rocket before moving on to Skill Level 3 . . . and so on.

Model Rocket Flight Sequence


4 MODEL REACHES PEAK ALTITUDE AND EJECTION CHARGE ACTIVATES RECOVERY SYSTEM.
3 MODEL STREAKS SKYWARD TO PEAK ALTITUDE DURING COAST PHASE.
5 RECOVERY PARACHUTE IS DEPLOYED.
2 HIGH THRUST AND ACCELERATION FOR POWERED FLIGHT.
6 TOUCH DOWN AND SAFE RECOVERY. . . READY TO BLAST-OFF AGAIN!
1 ROCKET IGNITION AND LIFT-OFF FROM ELECTRICALLY OPERATED LAUNCH PAD.

Recommended Launch Area:

In choosing a launch area, the larger the better. Football fields, parks, and playgrounds are great. The chart below shows the smallest recommended sizes. Remember, the larger the launch area, the better your chance of recovering your rocket. Choose a large field away from power lines, tall buildings, tall trees, and low flying aircraft.

MAKE SURE THE AREA WHERE YOU SET UP YOUR LAUNCHER IS CLEAR OF OBSTRUCTIONS AND HAS NO BROWN GRASS, DRY WEEDS, OR HIGHLY FLAMMABLE MATERIALS.

Engine Types	Minimum Launch Site * Dimension	Maximum Altitude
1/4A – 1/2A	50 Feet	200 Feet
A	100 Feet	400 Feet
B	200 Feet	800 Feet
C	400 Feet	1600 Feet
D	500 Feet	1800 Feet

*Minimum Launch Site Dimension for Circular Area is Diameter in Feet, and for Rectangular Area is Shortest Side in Feet.

Model Rocketry Is An Internationally Recognized Hobby With A Safety Record Of More Than 175 Million Successful Model Rocket Launchings.

Estes Model Rocket Engines Are Safety Tested And Contest Certified By:
- U.S. National Association of Rocketry
- Canadian Association of Rocketry

Estes Model Rocket Engines Have Been Tested And Approved By:
- United States B.O.E.
- Truesdail Laboratories, Inc.
- Canadian Department of Energy, Mines, and Resources
- Government of West Germany

Estes Model Rocketry Products Meet The Standards And Requirements Established By:
- National Fire Protection Association
- U.S. Consumer Product Safety Commission
- U.S. Food & Drug Administration
- U.S. Department of Transportation
- Federal Aviation Administration
- U.S. Postal Service
- United Parcel Service
- American Insurance Association
- International Air Transport Association
- Inter-Governmental Maritime Consultative Organization

Model Rocketry Is Endorsed As A Safe And Rewarding Hobby By:
- Cub Scouts of America
- Boy Scouts of America
- YMCA's
- National 4-H Clubs
- Civil Air Patrol
- NASA
- United States Air Force
- U.S.A.F. - J.R.O.T.C. Programs
- 15,000 Elementary, Jr. High, and High Schools
- Major Colleges and Universities
- Hundreds of Camp and Recreation Programs

Challenger-1
Flying Model Rocketry Starter Kit

SKILL LEVEL 1 Recommended for Beginners

This high performance Challenger-1 rocket is very easy-to-assemble with bright orange plastic nose cone and fin-unit. Features quick-finish decor with pre-colored body tube and realistic roll pattern decals. No painting required! The Challenger-1 rocket can be launched over and over again and can attain altitudes over 1,000 feet! Returns via 12" recovery parachute. You need only replace the rocket engine, igniter, and recovery wadding for each new flight.

Challenger-1 Launch Control System features futuristically designed hand-held launch controller with arming lamp, safety key, launch button, and 15 feet of launch cable with micro-clips. Plus sleekly designed launch pad with blast deflector plate and 1/8" x 36" two-piece launch rod. Entire system sets up quickly for launch and disassembles easily for compact storage.

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery wadding, and high reliability Solar Igniters for three exciting flights.

Special Bonus - New "Beginner's Tech Manual" filled with model rocketry data to get you started off right.

Ship. Wt. 1 lb.
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 C6-5 C6-7

No. 1416

ONLY $9.95

(Requires 6 or 12 volt lantern battery and glue - Not Included.)

Assembles in less than 45 Minutes

FALCON COMMANDER
Exotic Flying Model Rocket Starter Kit

SKILL LEVEL 1 Recommended for Beginners

NEW!

Dramatic Flights Over 1,000 Feet !

FEATURES:

Futuristic Forward Swept-Wing Falcon Commander Spacecraft. Easy-to-assemble with die-cut balsa fins, plastic nose cone, and quick-release engine mount. Great flights up to 1,000 feet with 12" parachute recovery. Simple paint scheme and realsitic kit decals make it a great display model too!

Launch Control System includes launch pad with blast deflector plate and 1/8" x 36" two-piece launch rod. Futuristic, hand-held launch controller features arming light, safety key and ignition button, plus launch cable with micro-clips.

Flight Pak has three high performance Model Rocket Engines plus Solar Igniters and Parachute Recovery Wadding for your first series of lift-offs.

Special Bonus — The Mini-Alpha Book of Model Rocketry is also included.

Ship. Wt. 1lb.
ENGINES: A8-3 (1st Flt.) A8-5 B4-4 B6-4 B6-6 B8-5 C6-5 C6-7

No. 1428 . . . . . ONLY $10.95

(Requires 6 or 12 volt lantern battery, glue, and paint -- Not Included.)

"This is Where to Begin"

THE ALPHA III STARTER KIT

SKILL LEVEL 1 Recommended for Beginners

IF YOU INTEND TO MAKE A REAL HOBBY OF ESTES MODEL ROCKETRY, THIS ALPHA III STARTER KIT IS A PROVEN PERFORMER FOR FLIGHT-AFTER-FLIGHT ENJOYMENT.

KIT INCLUDES:

ALPHA III Rocket with bright red plastic fin-unit and nose cone for easy, quick assembly. Plus realistic kit decals and white body tube. No painting required!

PORTA-PAD launch platform with strong girder construction and tilt-adjustment for wind direction. Features 36" long x 1/8" dia. launch rod with blast deflector plate.

SOLAR LAUNCH CONTROLLER, extremely light-weight and futuristically designed, requiring only 4 alkaline AA batteries (not included). Advanced shape allows for perfect hand-held control and is easily assembled in minutes. Features safety key, continuity check light, and launch button.

FLIGHT PAK with three NAR safety certified Model Rocket Engines, Parachute Recovery Wadding, and Solar Igniters, plus The Mini-Alpha Book of Model Rocketry.

ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 C6-5 C6-7

Ship. Wt. 3 lbs.

No. 1406 . . . . . ONLY $16.95

Over $23.00 Value!

Save big on the purchase of these exciting model rocketry outfits. Individual components purchased separately cost more!

(Batteries, Glue, and Finishing Supplies not included.)

DER BIG RED MAX

SKILL LEVEL 1 Recommended for Beginners.

Deluxe Model Rocketry Outfit

VIRTUALLY EVERYTHING YOU NEED TO GET STARTED IN ESTES MODEL ROCKETRY IN A "BIG" WAY. INCLUDES THE BIG RED MAX ROCKET . . . THE ULTRA ADVANCED BIG FOOT LAUNCH CONTROL SYSTEM . . . ENGINES . . . LAUNCHING SUPPLIES . . . AND THE "MINI-ALPHA BOOK OF MODEL ROCKETRY".

At a moderate price you get practically everything needed for assembly, lift-off, and recovery. (Batteries, glue and finishing supplies are not included.)

Experience the fun of building and the thrill of flying the Big Red Max rocket. This big bird, over two feet long, is easy-to-assemble with die-cut balsa fins, quick-release engine mount, huge plastic nose cone, and "far-out" Red Max decal sheet. Excellent performance with giant 18" orange and white parachute.

Big Foot Launch Control System (page 52) is capable of launching all the rockets in this catalog and is especially recommended for launching Maxi-Brutes and other large rockets. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot-print" for maximum launch pad stability. Requires four alkaline "D" cell batteries for power (not included.) Launch pad includes blast deflector plate, 1/8" x 36" two-piece launch rod, and adjustable swivel mount to compensate for wind direction.

Launch control unit features quick assembly plus safety key, continuity check light, ignition button, and 15 feet of launch cable.

Flight Pak is complete with three high performance, N.A.R. safety-certified engines (two "B" type and one "C" type) plus parachute recovery wadding and "Solar" rocket igniters for your first series of exciting flights.

ENGINES: B4-2 B6-2 (1st Flt.) B4-4 B6-4 C6-5

Ship. Wt. 3 lbs.

No. 1403

ONLY $19.95

Over 2 Feet Tall!

$28.22 Value! You Save $8.27

Ready-To-Launch X-15 STARTER KIT

1/68th Scale X-15 Rocket Plane Ready-to-launch in 15 minutes.

THE PERFECT BEGINNER'S OUTFIT FOR PARENT AND CHILD. BE READY TO LAUNCH YOUR X-15 ROCKET PLANE IN LESS THAN 15 MINUTES. Features all plastic snap-together construction for easy, quick assembly. Ready-to-fly X-15 Rocket Plane comes with 8" recovery parachute, authentic scale decor, and easy-lock engine mount. It looks like the real thing!

SKILL LEVEL 1 Recommended for Beginners.

Portable futuristic launch control system is ruggedly designed to provide launch-after-launch enjoyment. Advanced launch controller is designed for easy-grip hand-held control with safety interlock key, arming light, and launch control button. Realistic launch pad features 24" two-piece launch rod, pre-soldered micro-clips, mini-blast deflector, and sturdy girder construction. The entire system is pre-wired. (Requires four AA size alkaline penlight batteries for operation -- not included.)

X-15 Flight Pack includes 3 NAR Safety Certified A3-4T Mini engines, parachute recovery wadding, and Estes high reliability Solar Igniters. Special Bonus: The Mini-Alpha Book of Model Rocketry is also provided to get you started off right.

Ship. Wt. 2 lbs. 8 oz.

No. 0715

ONLY $19.95

It Really Flies!

"Fly Model Rocketry's Largest Scale Shuttle Orbiter!"

NASA SPACE SHUTTLE ORBITER

Model Rocketry Outfit

SKILL LEVEL 2 Suggested for individuals with some model building experience.

$34.22 Value! You Save $7.22

Features NEW SKYLITE™ skinned foam plastic parts for easy, quick assembly!

Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "Sky Lite" skinned foam plastic construction.

Easily assembled with molded plastic nose cone, vertical stabilizer fin, rear fuselage, and engine nozzle detail which removes for flight. Delivers spectacular flights over 400' and returns to Earth via huge 18" recovery parachute. Also features realistic kit decals and quick-release engine mount.

(See page 33 for more details.)

Big Foot Launch Control System (see page 52) with giant "two-foot-print" for maximum launch pad stability. Futuristic launch controller features safety key, arming light, and ignition button. Powered by four inexpensive "D" size alkaline batteries -- not included.

Flight Pak with two B4-2 and one C6-3 high performance model rocket engines, parachute recovery wadding and Solar igniters. Plus the Mini-Alpha Book of Model Rocketry.

Ship. Wt. 3 lbs.

ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3

No. 1425 ONLY $27.00

(Requires batteries, glue, and finishing supplies. Not Included.)

maxi alpha 3

"Pro-Demo" Model Rocketry Outfit

SKILL LEVEL 2

Suggested for Individuals with some model building experience.

Perfect for professional style demonstrations.

Features:

GIANT MAXI-ALPHA III ROCKET - Nearly 3 feet long with easy-to-assemble, press-fit, plastic fin-unit and huge plastic nose cone. Features bright red plastic parts and pre-colored white body tube. No painting required! Plus big decal and enormous 24" parachute. (See page 34.)

BIG FOOT™ Model Rocketry Launch System - Designed for launching the big ones with giant two-foot-print, 3/16" x 3' Maxi-launch rod, and blast deflector plate. Futuristic launch controller features safety key, arming light, and ignition button. (See page 52.)

HIGH PERFORMANCE FLIGHT PAK - Three "super-powered" D12-3 Rocket Engines, plus Parachute Recovery Wadding, Solar Igniters, and "The Mini-Alpha Book of Model Rocketry". Ship. Wt. 4 lbs.

No. 1411 .... ONLY $30.~~60~~

24

Over $39.00 Value!

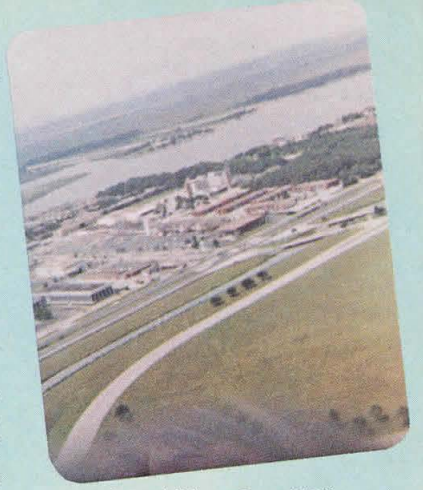
Nearly 3 Feet Tall and Flies Over 500 Feet High!

(Batteries, glue, and finishing supplies are not included.)

ESTES ASTROCAM 110™

AERIAL CAMERA MODEL ROCKETRY OUTFIT

With Delta II Launch Vehicle



Actual "AstroCam 110" photo of Johnson Space Center, Houston, TX.

SKILL LEVEL 2

The AstroCam 110 uses the Delta II Launch Vehicle or Challenger II Model Rocket (See page 26) with special stabilizing fin-units for best photo results. Camera is not sold separately. Other launch vehicles are not recommended.

FEATURES:

*The AstroCam 110, model rocketry's most advanced aerial camera. Shoots sharp, crisp, clear color 110 photos . . one per flight . . . from hundreds of feet above. Easy-to-assemble and simple to operate.

*Delta II Launch Vehicle features two-color decals, 12" parachute, and special plastic fin-unit for smooth and stable flights, time-after-time. All parts are pre-colored . . . no painting required!

*Big Foot Launch System with giant two-foot print for maximum launch pad stability, 1/8" x 36" launch rod, blast deflector plate, and rugged girder construction. Plus hand-held launch controller with continuity check light, safety key, ignition button, and 15 feet of launch cable.

*Requires 4 alkaline type "D" size batteries for power (not included).

*Flight Pak includes three C6-7, high performance Estes Rocket Engines plus Solar Igniters, Recovery Wadding and the Mini Alpha Book of Model Rocketry.

*Uses Kodak Kodacolor 110 color print film, ASA 400, or equivalent - not included. **Film and developing are available locally.** Ship. Wt. 3 lbs.

ENGINES: B8-5 B8-7 B14-5 B14-7 C6-5 C6-7 (1st Flt.) **No. 1410**

12

Take Incredible "Color" Photos From Hundreds of Feet In The Sky!

ONLY $38.00

Over $41.00 Value!

ASTROCAM 110
AERIAL CAMERA WITH DELTA II LAUNCH VEHICLE
FLYING MODEL ROCKETRY OUTFIT
Featuring Big Foot Launch Control System
ESTES
1979 Model Rocketry Catalog

(Film, batteries, glue, and finishing supplies are not included.)

estes aerospace CLUB

BECOME A MEMBER TODAY!

THRUST BAR ACHIEVEMENT PROGRAM

- SKILL LEVEL ONE BEGINNER/NEW EAC MEMBER
- SKILL LEVEL TWO INTERMEDIATE ROCKETEER
- SKILL LEVEL THREE CRAFTSMAN ROCKETEER
- SKILL LEVEL FOUR ADVANCED ROCKETEER
- SKILL LEVEL FIVE EXPERT ROCKETEER

Join more than 24,000 Estes rocketeers getting the most out of model rocketry. You'll discover membership in the Estes Aerospace Club opens up a whole new world of model rocket activities. The EAC Thrust Bar Achievement Program awards members with iron-on thrust bars & achievement certificates as they progress from one skill level to the next. Your membership includes:

VIPER ROCKET – Club's Exclusive High Performance Design.
MEMBERSHIP CERTIFICATE – Suitable for framing.
CLUB EMBLEM – Official iron-on patch. As you progress to higher skill levels, you receive additional iron-on "thrust" bars.
DECAL SHEET – Identify your rockets as part of the EAC fleet!
RANGE BOX STICKERS – Multi-purpose stick-ons for your range equipment.
EAC STATIONERY – Distinctive stationery for your special notes and letters.
MODEL ROCKETRY TECHNICAL MANUAL – Includes information on construction techniques, finishing, stability, tracking, recovery systems, multi-staging, and boost gliders plus much, much, more.
COPY OF MODEL ROCKET NEWS – Features free plan designs, technical articles, contests, rocketeer contributions and more.
EAC PRODUCTS BULLETIN – Special offers for kits and products available ONLY to EAC members.

JOIN NOW!
BECOME AN ESTES AEROSPACE CLUB ROCKETEER TODAY!!
Simply Check the EAC box on your order form and include your payment. Ship. Wt. 9 oz. Regular EAC membership **No. 1447**

ONLY $5.00

You Get All This...

SKILL LEVEL 1

WIZARD

WIZARD Simple and quick to assemble. One of the highest performing vehicles in Estes' fleet with its 1,600 foot altitude capability and huge 30" streamer recovery system that makes it easy to track. Length: 12" (30.5 cm) Dia. 0.736" (18.7 mm) Wt. 0.79 oz. (20 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7
No. 1292 . . . . . $2.25

FALCON COMMANDER Futuristic forward swept-wing spacecraft. Terrific Skill Level 1 exotic model. Can achieve altitudes up to 1,000 feet. Length: 19.12" (49 cm) Dia. .976" (24.8 mm) Wt. 1.1 oz. (30 g).
ENGINES: A8-3 (1st Flt.) A8-5 B4-4 B6-4 B6-6 B8-5 C6-5 C6-7
No. 1364 . . . . . $4.00

NEW!

KADET

KADET Achieve flights over 1,000 feet with this super high flying sport model. Nearly indestructible with pre-colored plastic nose cone and fin-unit. Quick and easy-to-assemble. No painting required! Easy-trak recovery with 30" fluorescent streamer. Length: 15" (38 cm) Dia. .98" (25 mm) Wt. 1.13 oz. (32 g).
ENGINES: 1/2A6-2 A8-3 A8-5 B4-4 (1st Flt.) B6-4 B8-5 B14-5 C6-5 C6-7
No. 1328 . . . . . $4.00

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 8 oz.

SKILL LEVEL 1

STREAK

Lightweight, wind-cheating design (1/8 oz. without engine). Great for contests and records. Features simple feather-weight recovery. Length: 5.6" (14.2 cm) Dia. 0.720" (18.3 mm) Wt. 0.1 oz. (3 g).
ENGINES: 1/2A6-4 (1st Flt.) A8-5 B4-6 B6-6
B8-7 B14-7 C6-7
No. 1204 . . . . . $1.95

THE BAT

Unique sport model with far-out "BAT" decor. Easy-to-build. Delivers great flights over 1,000 feet and returns via 90" long streamer. Length: 16.63" (42.2 cm) Dia. .976" (24.8 mm) Wt. .92 oz. (26 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4
B8-5 C6-5 C6-7
No. 1362 . . . . . $3.50

SCOUT

Estes Industries first model rocket, originally developed in 1959. Teaches you elementary balance and design principles. Sleek lines and tumble recovery for really exciting flights. Pat. No. 3,114,317. Length: 7" (18 cm) Dia. 0.765" (19.4 mm) Wt. 0.3 oz. (9 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4
B8-5 B14-5 C6-5
No. 1201 . . . . . $1.85

Mark II

Ideal for sport or demonstration flying. Designed for midbody ejection/separation system with streamer recovery. It's an excellent challenge for the novice rocketeer. Top-notch performance. Length: 9.1" (23 cm) Dia. 0.765" (19.4 mm) Wt. 0.7 oz. (20 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4
B8-5 B14-5 C6-5
No. 1202 . . . . . $3.25

Alpha

The ideal kit for your first or second rocket. Swept-fin design makes it a really great performer. Features balsa nose cone and fins. Length: 12.25" (31.1 cm) Dia. 0.976" (24.8 mm) Wt. 0.8 oz. (23 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4
B8-5 B14-5 C6-5 C6-7
No. 1225 . . . . . $3.50

X-RAY

Perfect for your first payloader or second kit. Features large see-through payload/cargo section. The recommended single-stage payload vehicle for small biological or insect projects. Length: 16.75" (42.5 cm) Dia. 0.736" (18.7 mm) Payload Section Dia. 0.976" (24.8 mm) Wt. 0.7 oz. (20 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-4 B6-4
B8-5 B14-5 C6-5
No. 1218 . . . . . $5.25

METEOR

Super sport flyer with 90" streamer recovery. High performance flights to 1,200 feet. Length: 18.63" (47.3 cm) Dia. .976" (24.8 mm) Wt. .94 oz. (26.5 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4
B6-4 B8-5 C6-5 C6-7
No. 1370 . . . . . $3.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 5 oz.

SKILL LEVEL 1

NEW!

Astro Bee

Reach altitudes over 1,200 feet with this sounding rocket style design. Length: 14.75" (37.5 cm) Dia. .976" (24.8 mm) Wt. .823 oz. (23.3 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-4 B6-4 B8-5 C6-5 C6-7
No. 1356 ..... $3.00

Alpha III

Another great first or second kit. Plastic nose cone and fin assembly make for easy, quick assembly. This rocket will deliver outstanding performance flight-after-flight. Length: 12.25" (31.1 cm) Dia. 0.976" (24.8 mm) Wt. 1.2 oz. (33.9 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1256 ..... $4.00

Sky Hook

An excellent kit for your second rocket. Easy-to-build with terrific performance flight-after-flight. Length: 12" (30.5 cm) Dia. 0.765" (19.4 mm) Wt. 0.7 oz. (20 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 A8-5 B4-4 B4-6 B6-4 B6-6 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7
No. 1208 ..... $3.25

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 8 oz.

NEW!

SPIN FIN

SPIN FIN

Unique spin-flight design creates dramatic curling smoke trail on its way up. Spectacular flights over 1,200 feet with 30" streamer recovery. Length: 11.6" (29.5 cm) Dia. .736" (18.7 mm) Wt. .6 oz. (17 g).
ENGINES: 1/2A6-4 A8-5 (1st Flt.) B4-6 B6-6 C6-7
No. 1355 ..... $2.25

POLARIS

POLARIS

Sleek sounding rocket design with large payload section. Excellent performance for flights over 1,000 feet. Perfect for small insect payloads. Length: 18" (45.7 cm) Dia. 0.976" (24.8 mm) Wt. 1.3 oz. (37 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1324 ..... $5.00

ICARUS

High altitude payload vehicle with see-through cargo section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual roll pattern decor. Length: 20.8" (52.8 cm) Dia. 0.976" (24.8 mm) Wt. 1.3 oz. (37 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1277 ..... $5.25

SKILL LEVEL 1

QUASAR

Dramatic, easy-to-build model for beginners. Bright printed mylar wrap-on decal for the body tube. No painting required! Length: 14" (35.6 cm) Dia. 0.976" (24.8 mm) Wt. 1.5 oz. (42 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-2 B4-4 B6-2 B6-4 B8-5 B14-5 C6-5
No. 0650 . . . . . $5.00

Big Bertha

Perfect kit for a "big" second rocket. Ideal for demonstration launches. Slow, realistic lift-off for really spectacular flights. 24" from nose to tail. A real favorite of rocketeers.
Length: 24" (61 cm) Dia. 1.637" (41.6 mm) Wt. 2.2 oz. (62.4 g).
ENGINES: A8-3 B4-2 B4-4 B6-2 (1st Flt.) B6-4 B8-5 B14-5 C6-5
No. 1223 . . . . . $6.25

ANTARES

Achieve flights over 1,200 feet with this high performance sports model. Very easy-to-assemble. Length: 14.6" (37.1 cm) Dia. 0.976" (24.8 mm) Wt. 0.77 oz. (22 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1276 . . . . . $4.50

SCAMP

Great sports flier with sleek, high performance design. Flights over 1,000 feet with "C" type engine. Length: 13.75" (34.9 cm) Dia. 0.976" (24.8 mm) Wt. 0.8 oz. (23 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1286 . . . . . $4.75

GAMMA

Super-sport design for great performance. Attain altitudes over 1,000 feet with "C" type engines. Unique two-piece body construction for simplified two-color paint scheme. Length: 20.1" (51.1 cm) Dia. 0.976" (24.8 mm) Wt. 1.13 oz. (32 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7
No. 1325 . . . . . $5.00

NEW!

COMET

High performance sport flyer over 2 feet long. Quick and easy-to-assemble. Delivers great flights over 1,200 feet.
Length: 24.25" (61.6 cm) Dia. 1.325" (33.7 mm) Wt. 1.8 oz. (51 g).
ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 C6-5 C6-7
No. 1368 . . . . . $4.00

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 10 oz.

SKILL LEVEL 1

Mini-BRUTES

—Photo by David Brownell—

rogue

Scale-like sounding research vehicle. Excellent performance for great sport flying. Length: 11.7" (29.7 cm) Dia. 0.736" (18.7 mm) Wt. 0.75 oz. (21.26 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/2A3-2T A3-4T A10-3T

No. 0818 . . . . . $3.50

STAR DART

High performance, mini-engine powered sport rocket. Flys over 1,000 feet and returns via streamer recovery. Very easy-to-assemble.
Length: 8.4" (21.3 cm) Dia. .541" (13.7 mm) Wt. .225 oz. (6.4 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/4A3-4T 1/2A3-4T A3-6T

No. 0860 . . . . . $1.75

mini Bertha

A little sister to the famous Big Bertha listed on page 20. Great performance with colorful 10" parachute recovery. Length: 11.25" (28.58 cm) Dia. 0.736" (18.69 mm) Wt. 0.484 oz. (13.72 g).
ENGINES: 1/2A3-2T (1st Flt.) A3-4T A10-3T

No. 0803 . . . . . $3.25

SARK

Achieve flights over 1,000 feet with the S.A.R.K. space probe. Easy-to-assemble with streamer recovery. Length: 11.13" (28.3 cm) Dia. .541" (13.7 mm) Wt. 0.5 oz. (13.3 g).
ENGINES: 1/2A3-2T 1/2A3-4T A3-4T A3-6T A10-3T

No. 0861 . . . . . $2.50

LITTLE JOHN

Authentic appearance of a semi-scale surface-to-surface military vehicle with U.S. Army decor. Length: 14.0" (35.6 cm) Dia. 0.976" (24.8 mm) Wt. 0.875 oz. (24.7 g).
ENGINES: 1/2A3-2T (1st Flt.) A3-4T A10-3T

No. 0819 . . . . . $4.00

eclipse

Reach altitudes over 600 feet with this great, Mini-Brute sport flier. Very high performance design. Length: 12.1" (30.73 cm) Dia. 0.736" (18.69 mm) Wt. 0.51 oz. (14.5 g).
ENGINES: 1/4A3-2T 1/2A3-2T (1st Flt.) 1/2A3-4T A3-4T A3-6T A10-3T

No. 0846 . . . . . $3.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 6 oz.

SKILL LEVEL 1 Mini-BRUTES

MOSQUITO The smallest of all Mini-Brutes combines fantastic performance with feather-weight recovery. Balsa and paper construction with simple spray paint decor makes for quick-and-easy assembly. Length: 3.9" (9.9 cm) Dia. 0.541" (13.74 mm) Wt. 0.1 oz. (2.83 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/4A3-4T 1/2A3-4T A3-6T A10-3T
No. 0801 . . . . . $ .99

Javelin Super performance, easy-to-build competition design with streamer recovery. Scale-like sounding rocket appearance. Reaches altitudes over 1,000 feet. Length: 12.4" (31.5 cm) Dia. 0.541" (13.74 mm) Wt. 0.34 oz. (9.6 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/2A3-2T A3-4T A10-3T
JAVELIN & SUPER FLEA COMBO KIT
No. 0815 . . . . $4.00

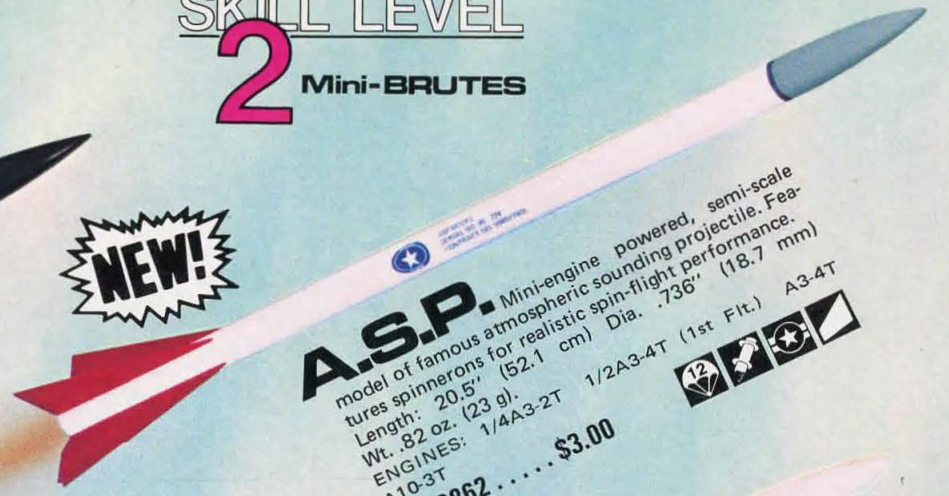
TWO FOR THE PRICE OF ONE! SUPER FLEA & JAVELIN ONLY $4.00

Super Flea The "Flea's" competition design gives ultra-high performance. Reaches incredible altitudes with ogive nose cone and swept fins. Easy-to-build and features break-away drag recovery. Length: 7.34" (18.64 cm) Dia. 0.541" (13.74 mm) Wt. 0.158 oz. (4.5 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/2A3-2T 1/2A3-4T A3-4T A10-3T

Screamer Another super performer featuring spectacular streamer recovery. She screams off the pad. "Don't Blink", or you'll miss her. Length: 7.8" (19.81 cm) Dia. 0.541" (13.74 mm) Wt. 0.255 oz. (7.23 g).
ENGINES: 1/4A3-2T (1st Flt.) 1/4A3-4T 1/2A3-4T A3-6T A10-3T
No. 0802 . . . . . $3.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 6 oz.

SKILL LEVEL 2 Mini-BRUTES



NEW!

A.S.P. Mini-engine powered, semi-scale model of famous atmospheric sounding projectile. Features spinnerons for realistic spin-flight performance. Length: 20.5" (52.1 cm) Dia. .736" (18.7 mm) Wt. .82 oz. (23 g).
ENGINES: 1/4A3-2T 1/2A3-4T (1st Flt.) A3-4T A10-3T
No. 0862 . . . . . $3.00

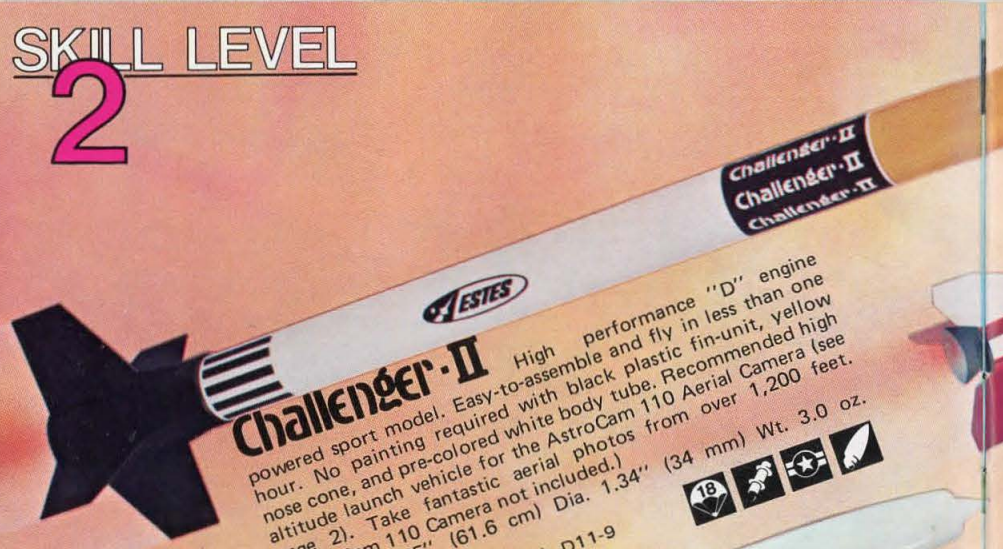
BETA Two-stage Mini-Brute for really high flights. Low-drag design with sounding rocket style decor. Booster stage has tumble recovery while top stage returns via parachute. Pat. No. 3,392,302. Length: 13.76" (34.95 cm) Dia. 0.736" (18.69 mm) Wt. 0.75 oz. (21.3 g).
ENGINES: UPPER STAGE 1/4A3-2T (1st Flt.) 1/2A3-4T A3-6T A10-3T BOOSTER STAGE 1/2A3-0T (1st Flt.) A3-0T A10-0T
No. 0845 . . . . . $3.75

SKILL LEVEL 3 Mini-BRUTES

NEW!

ESTES STARLINER Futuristic Estes version of a commercial space transport ship of the 21st Century. Mini-engine powered for low cost flights. Length: 12.6" (32 cm) Dia. .736" (18.7 mm) Wt. .9 oz. (25 g).
ENGINES: 1/2A3-2T (1st Flt.) A3-2T A3-4T A10-3T
No. 0863 . . . . . $3.00

SKILL LEVEL 2



Challenger·II

High performance "D" engine powered sport model. Easy-to-assemble and fly in less than one hour. No painting required with black plastic fin-unit, yellow nose cone, and pre-colored white body tube. Recommended high altitude launch vehicle for the AstroCam 110 Aerial Camera (see page 2). Take fantastic aerial photos from over 1,200 feet. (AstroCam 110 Camera not included.)
Length: 24.25" (61.6 cm) Dia. 1.34" (34 mm) Wt. 3.0 oz. (86 g).
ENGINES: D12-7 (1st Flt.) D11-9

No. 1330 . . . . . $6.50

TEROS

Authentic anti-aircraft missile styling with U.S.A.F. decor. Exciting scramjet design with ramjet nose. Super sports model. Length: 13" (33.0 cm) Dia. 0.976" (24.8 mm) Wt. 1.2 oz. (33.9 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

No. 1285 . . . . . $4.75

Patriot

Big, burly, and impressive sport model over 25" tall. Spectacular "All-American" red, white, and blue decor. Makes a great demonstration model. Fast, easy construction.
Length: 26" (66 cm) Dia. 1.637" (41.6 mm) Wt. 3.3 oz. (94 g).
ENGINES: B4-2 (1st Flt.) B4-4 B6-2 B6-4 B8-5 B14-5 C6-5 C6-7

No. 0652 . . . . . $7.25

BLACK BRANT III

Sounding scale model of the primary research vehicle produced by Canadian Bristol Aerospace. An excellent choice for your first scale project. Simple construction with plastic nose cone and engine nozzle. Flys over 1,000 feet with "C" engine.
Length: 20.6" (52.3 cm) Dia. .976" (24.8 mm) Wt. 1.06 oz. (30 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B6-6

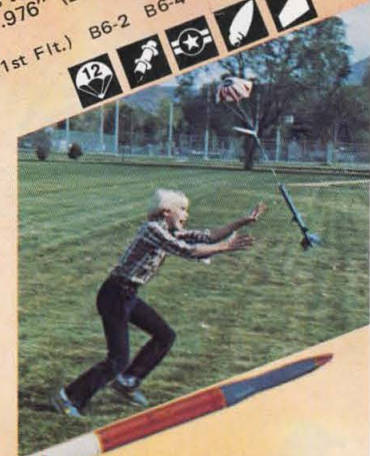
No. 1293 . . . . . $5.25

NEW!

SAM-1

Scale-like surface-to-air missile with two-stage appearance. Excellent flights to 900 feet.
Length: 18.2" (46.2 cm) Dia. .976" (24.8 mm) Wt. 1.1 oz. (31.1 g).
ENGINES: A8-3 B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 C5-3 C6-3 C6-5

No. 1357 . . . . . $4.50



NEARLY 4 FEET LONG!

NOMAD

SURFACE TO SURFACE MISSILE

Super long scale-like surface-to-surface missile with ICBM decor. Nearly 4 feet tall, this big bird is easy-to-assemble with plastic nose cone, adapter section and fin-unit. Features a really long payload section.
Length: 44.25" (112.4 cm) Dia. .976" (24.8 mm) Wt. 1.48 oz. (42 g).
ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

No. 1344 . . . . . $5.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 10 oz.

SKILL LEVEL 2

PHOTON DISRUPTOR

Equip your star fleet with this sophisticated scale missile from the 23rd century. Designed as a mass conversion weapon to overload the defensive screens of an enemy vessel, the actual Photon Disruptor may also be used as an interceptor missile, a proximity space mine, or a distress signal. Length: 18.25" (46.4 cm) Dia. 0.976" (24.8 mm) Wt. 1.4 oz. (40 g).
ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5

No. 1282 . . . . . $5.25

Stiletto

Exciting scale-like surface-to-air interceptor missile with realistic military decals. Single-engine super-sport performance with two-stage appearance. Length: 22.4" (56.9 cm) Dia. 0.976" (24.8 mm) Wt. 1.27 oz. (36 g).
ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5

No. 1323 . . . . . $5.00

Odyssey

This unique interstellar spacecraft is conceived to perform a variety of space rescue, exploratory, or intruder intercept missions. Impulse power unit jettisons after lift-off from planetary launch site. Its two-man crew and engineering section are then accelerated to near-light velocities for rendezvous and space rescue operations. Our version features super-detailed plastic nose section. Length: 24.1" (61.21 cm) Dia. 1.325" (33.7 mm) Wt. 2.40 oz. (68 g).
ENGINES: B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5

No. 1289 . . . . . $6.25

RUSSIAN SS-1C SCUD-B

Impressive 1/20.4 scale model of the Russian medium range surface-to-surface missile. Scud-B is the NATO code name designated for this missile which is deployed by all the armies of the Warsaw Pact countries. This realistic kit is easy-to-assemble. Build it sport-scale or true-scale. A superb flyer and perfect military model for the beginner or advanced rocketeer. Length: 21.7" (55.1 cm) Dia. 1.637" (41.6 mm) Wt. 2.5 oz. (70.9 g).
ENGINES: B4-2 B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5 C6-7

No. 1340 . . . . . $5.50

DER RED MAX

Far-out super-fun model. Large stable design gives great sport performance. Length: 16.25" (41.3 cm) Dia. 1.637" (41.6 mm) Wt. 2.38 oz. (67 g).
ENGINES: B4-2 (1st Flt.) B4-4 B6-2 B6-4 B8-5 C6-5 B14-5 C6-7

No. 0651 . . . . . $6.25

NIKE-X

Scale-like single-stage model of U.S. Army's 4th generation, two-stage surface-to-air missile. Nike-style design with U.S. Army decor. Great performance for really impressive flights. Easy-to-assemble. Length: 23.4" (59.4 cm) Dia. 1.325" (33.7 mm) Wt. 2.3 oz. (65 g).
ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 B14-5 C6-5

No. 1270 . . . . . $6.25

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 11 oz.

SKILL LEVEL 2

CHEROKEE-D

rocket that will practically sail out-of-sight. Big 18" 'chute brings it down safely flight-after-flight. A really beautiful model for your first "D" powered kit. Length: 21.6" (54.9 cm) Dia. 1.325" (33.7 mm) Wt. 2.75 oz. (78 g).
ENGINES D11-9 D12-5 (1st Flt.) D12-7

No. 1247 . . . . . $6.25

NEARLY 5 FEET LONG!

ESTES COBRA-1500

"C" type engine, from this extra long sport flier. Perfect demonstration model with large 18" parachute recovery. Length: 59" (149.9 cm) Dia. 1.325" (33.6 mm) Wt. 3.17 oz. (90 g).
ENGINES: B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 B14-5 C6-5

No. 1294 . . . . . $6.50

ESTES SKYBOLT

high performance sport model. Super "D" engine powered feet plus dramatic recovery with 90" streamer. Easy-to-assemble and finish. Length: 23" (58.4 cm) Dia. 1.325" (336 mm) Wt. 1.75 oz. (50 g).
ENGINES: D11-9 D12-7 (1st Flt.)

No. 1334 . . . . . $4.50

SKY RAIDER

are possible with this big "D" engine powered payloader. Great sports model with large payload section. Flights up to 1,500 feet Length: 32.75" (83.2 cm) Dia. 1.325" (33.7 mm) Wt. 2.39 oz. (67.8 g).
ENGINES: D12-5 D12-7 (1st Flt.) C6-5 (with EM-2050 adapter not included. See page 61.)

No. 1290 . . . . . $6.25

BANDIT

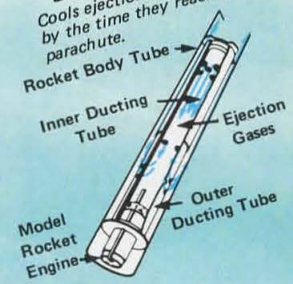
tem. It never needs recovery wadding! High performance design and military style appearance makes the Bandit a really impressive bird. Over 25" long with large payload section. Features advanced ejection ducting sys-
Length: 27.75" (65.4 cm) Dia. 1.325" (33.6 mm) Wt. 2.6 oz. (73.7 g).
ENGINES: A8-3 B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5

No. 1248 . . . . . $7.25

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 11 oz.

BANDIT'S ADVANCED EJECTION DUCTING SYSTEM

Cools ejection gases completely by the time they reach your parachute.



SKILL LEVEL 2

NEW!

ORBITAL INTERCEPTOR

Exotic short range interceptor designed for orbital patrol and larger starship escort. Spectacular flights over 1,200 feet. Length: 17" (43.2 cm) Dia. .976" (2.5 mm) Wt. 1.5 oz. (42 g). ENGINES: 1/2A6-2 A8-3 (1st Flt.) B4-4 B6-4 B8-5 C5-3 C6-5 C6-7

No. 1359 . . . . . $3.75

NEW!

Star Speeder

Single place galactic fighter capable of tremendous speed and maneuverability. The Estes version sports great performance with flights over 800 feet. Length: 13.75" (34.9 cm) Dia. .736" (18.7 mm) Wt. 1.3 oz. (35 g). ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 C6-5

No. 1366 . . . . . $4.00

NEW!

F-61 STARFIGHTER

Futuristic starfighter design with plastic cockpit canopy and simulated air-to-air missiles, laser cannons, and infra-red photon torpedos. Great flights up to 900 feet. Length: 18.75" (47.6 cm) Dia. .976" (24.8 mm) Wt. 1.1 oz. (31.8 g). ENGINES: A8-3 B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 C5-3 C6-3 C6-5

No. 1358 . . . . . $4.50

Features NEW SKYLITE™ skinned foam plastic parts for easy, quick assembly!

"Fly Model Rocketry's Largest Scale Space Shuttle Orbiter!"

NASA SPACE SHUTTLE ORBITER

Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "SkyLite" skinned foam plastic construction. Easily assembled with molded plastic nose cone, vertical stabilizer fin, rear fuselage, and engine nozzle detail which removes for flight. Delivers spectacular flights over 500' and returns to Earth via huge 18" recovery parachute. Length: 15-1/4" (39 cm) Wing Span 10" (25 cm) Wt. 3.75 oz. (106 g). ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3

No. 1337 . . . . . $13.00

NEW!

Skytracer

Interplanetary fighter craft designed with dual directional thrusters, wing mounted laser cannons, and dramatic canopy nose cone. A challenging Skill Level 2 exotic model. Length: 13" (33 cm) Dia. .976" (24.8 mm) Wt. 1.9 oz. (54 g). ENGINES: A8-3 (1st Flt.) B4-4 B6-4 B8-5 C5-3 C6-5

No. 1361 . . . . . $5.00

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 12 oz.

SKILL LEVEL 2

Maxi Icarus

Huge super "D" engine powered payload model with large see-thru cargo section. Delivers spectacular flights over 1,000 feet. Over 6 cubic inches or up to 80 grams of payload capacity. Length: 29.75" (75.5 cm) Dia. 1.64" (41.6 mm) Wt. 3.2 oz. (90 g).
ENGINE: D12-5
No. 1331 . . . . . $9.00

Mean Machine

Tallest rocket in the Estes fleet. "D" engine powered for spectacular flights over 800 feet. Over 6 feet long with giant 24" 'chute. Easy-to-assemble for a really great looking bird. Uses 3/16" launch rod. Length: 78.75" (200 cm) Dia. 1.637" (41.6 mm) Wt. 5.8 oz. (164 g).
ENGINE: D12-5
No. 1295 . . . . . $10.00

Maxi Alpha

PERFECT FOR DEMONSTRATIONS!

Colossus

OVER 4 FEET TALL!

Blue Bird Zero

OVER 6 FEET TALL!

Maxi Alpha

NEARLY 3 FEET TALL!

Very easy-to-assemble giant scale version of one of our most popular kits. Can be ready-to-launch in approximately 30 minutes. Features new press-fit plastic fin-unit, plus plastic nose cone. "D" engine powered for truly spectacular flights up to 500 feet. Perfect for demonstrations. No painting required! Uses 3/16" launch rod. Length: 33.25" (84.46 cm) Dia. 2.6" (66.04 mm) Wt. 7.4 oz. (210 g).
ENGINE: D12-3
No. 1321 . . . . . $12.50

Colossus

Huge addition to our Maxi-Brute fleet. Over 4 feet long with big plastic nose cone and press-fit plastic fin-unit. Quick and easy-to-assemble. Really spectacular "D" powered flights with slow realistic lift-off. No painting required! Uses 3/16" launch rod. Length: 51.25" (130.18 cm) Dia. 2.6" (66.04 mm) Wt. 9.52 oz. (270 g).
ENGINE: D12-3
No. 1326 . . . . . $19.00

Blue Bird Zero

3 feet tall. Easy-to-assemble. Delivers high performance flights and gentle recoveries with big 18" recovery 'chute. Experimental sounding design over Length: 39.75" (101 cm) Dia. 1.325" (33.7 mm) Wt. 2.7 oz. (76 g).
ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 B14-5 C6-5 C6-7
No. 1335 . . . . . $6.50

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 15 oz.

SKILL LEVEL 2

Multi–Stagers

Multi-staging is the next step in expanding your model rocketry skills. Each kit demonstrates how real spaceships operate. The first stage is always ignited electrically. Second stage ignition occurs automatically in mid-flight upon burnout of the first stage. Performance and maximum altitude are dramatically increased thru multi-staging.

DELTA STAR Really sleek, super high performance two-stage payloader capable of lofting a 1 oz. payload over 1,000 feet with "C" type engines. Can be flown either single or multi-stage. Booster stage employs tumble recovery. Length: 24" (61 cm) Dia. .98" (24.9 mm) Wt. 1.13 oz. (32 g).
ENGINES: SINGLE STAGE A8-3 (1st Flt.) B4-4 B6-4 B8-5 B8-7 B14-5 C6-5 C6-7 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0
12
No. 1322 . . . . . $6.00

NEW!

SKY-HI High performance two-stager with single stage, sounding rocket appearance. Nesting fins create very sleek design. Simplified construction. Length: 25" (63.5 cm) Dia. .976" (24.8 mm) Wt. 1.7 oz. (48 g).
ENGINES: SINGLE STAGE A8-3 (1st Flt.) B4-4 B6-4 B8-5 C6-5 UPPER STAGE A8-5 (1st Flt.) B6-6 B8-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0
18
No. 1365 . . . . . $4.50

Scorpion High flying two-stage sport model with research vehicle styling. Easy-to-build and exciting to fly with all plastic fin units. Booster employs tumble recovery while upper stage streaks skyward to altitudes over 1,000 feet. Length: 26.5" (67.3 cm) Dia. .976" (24.8 mm) Wt. 1.8 oz. (52 g).
ENGINES: SINGLE STAGE A8-3 (1st Flt.) A8-5 B4-4 B4-6 B6-4 B6-6 B8-5 B14-5 C6-5 C6-7 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 B14-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 B14-0 C6-0
12
No. 1333 . . . . . $5.50

AVENGER Long, slender lines give this bird the sounding rocket look. Large 18" 'chute brings payload section back gently, booster employs tumble recovery. Length: 32" (81.3 cm) Dia. 1.325" (33.7 mm) Wt. 2.7 oz. (77 g).
ENGINES: UPPER STAGE A8-5 B4-6 B6-6 (1st Flt.) B8-7 B14-7 C6-7 BOOSTER STAGE A8-0 B6-0 (1st Flt.) B8-0 B14-0 C6-0
18
No. 1238 . . . . . $6.25

Vigilante Ultra-high performance two-stage model for flights over 1,100 feet. Sleekly designed upper stage returns via 18" parachute while the booster employs tumble recovery. Length: 26.5" (67 cm) Dia. 1.325" (33.6 mm) Wt. 2.25 oz. (64 g).
ENGINES: UPPER STAGE 1/2A6-4 A8-5 (1st Flt.) B4-6 B6-6 B8-7 B14-7 C6-7 BOOSTER STAGE 1/2A6-0 A8-0 (1st Flt.) B6-0 B8-0 B14-0 C6-0
18
No. 1278 . . . . . $6.25

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 12 oz.

SKILL LEVEL 3

NEW!

Star ship NOVA

Truly awesome in appearance, this inter-galactic explorer is believed to be outfitted with both conventional atomic engines and hyper-space starflight drive. Heavily armed with multiple phaser banks, photon torpedos, and energy deflection shields, the Nova is prepared to meet any foe. The Estes version of the magnificent starship is perfect for demonstrations and really great for display.
Length: 19.75" (50.2 cm) Dia. .976" (24.8 mm)
Wt. 2.3 oz. (65 g).
ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3

No. 1371 . . . . . $6.00

NEW!

alien explorer

Incredible alien starship believed to be from a distant galaxy. Is it friend or foe? Its size and unique appearance make it a most dramatic demonstration and display model. Really spectacular lift-off and recovery. Length: 45" (114.3 cm) Dia. .976" (24.8 mm) Wt. 2.43 oz. (68.8 g).
ENGINES: B6-2 B6-4 (1st Flt.) B8-5 C6-5

No. 1372 . . . . . $7.50

WORLD FEDERATION STAR PROBE

Our engineer's conception of deep space exploratory craft. Powered by atom fueled Nerva thrusters, this futuristic interplanetary voyager utilizes advanced "Loop-Fin" stabilization. Its mission is to peacefully seek-out and discover other life forms. Unique "Loop-Fin" design delivers spectacular flights. Length: 31" (78.7 cm) Dia. .976" (24.8 mm) Wt. 2.5 oz. (70 g).
ENGINES: A8-3 B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 B14-5 C6-5 C6-7

No. 1341 . . . . . $6.50

NEARLY 4 FEET LONG!

ORION STARFIGHTER

Perimeter defense star-fighter for the Orion cluster. Outfitted with white plasma energy shield and Estegon crystal engines for star-streak acceleration.
Length: 20.25" (51.44 cm) Dia. 0.976" (24.81 mm)
Wt. 1.115 oz. (31.6 g).
ENGINES: A8-3 B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 B14-5 C6-5 C6-7

SUPER VALUE!
STARFIGHTER COMBO KIT
Orion StarFighter
and
Torellian Invader

These science fiction kits deliver great flights and are terrific display models

TORELLIAN INVADER

Galactic invader and primary attack fighter from the Torellian Empire. Capable of deploying Zarchronian space mines and launching photon torpedos. Length: 20" (50.8 cm) Dia. 0.976" (24.8 mm) Wt. 1.291 oz. (36.6 g).
ENGINES: A8-3 B4-2 B4-4 (1st Flt.) B6-2 B6-4 B8-5 B14-5 C6-5 C6-7

ORION STARFIGHTER & TORELLIAN INVADER COMBINATION KIT

No. 1343 . . . . . $9.00

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 12 oz.

SKILL LEVEL 3

Satellite Interceptor

Envisioned by designers to be operational by 1990, this ultra-sophisticated interceptor patrols near-space for possible aggression by hostile satellites. Highly advanced defense systems include both nuclear and laser armaments. Kit features include printed balsa fins, plus plastic nose and exhaust cones. Flys over 600 feet. Length: 22.25" (56.5 cm) Dia. 0.976" (24.8 mm) Wt. 1.38 oz. (39 g).

ENGINES: 1/2A6-2 A8-3 B4-4 (1st Flt.) B6-4 B8-5 B14-5 B14-7 C6-5 C6-7

No. 1296 . . . . . $5.25

NEW!

Andromeda

Designed for journeys to distant planets this incredible "starship of the future" will be an outstanding addition to your model rocket collection. Performing interplanetary missions within the galaxy, our engineer's conception of the actual ship features simulated hybrid fission-ion propulsion engines, forward crew module and colorful mission decor. This beauty is over 43" long and represents a unique entry to our own Starship Fleet. Andromeda's flights are most spectacular. Length: 43.3" (110 cm) Dia. 0.736" (18.7 mm) Wt. 3.0 oz. (85 g).

ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 B14-5 C6-5

No. 1273 . . . . . $9.50

OVER 43" LONG!

NEW!

Vindicator

Sleek interplanetary interceptor with futuristically detailed nose cone. A really sharp display model with starfight camouflage decor. Great demonstration model with flights up to 900 feet. Length: 25.5" (64.8 cm) Dia. 1.325" (33.7 mm) Wt. 2.6 oz. (72.4 g).

ENGINES: B4-2 B6-2 B6-4 (1st Flt.) B8-5 C6-3 C6-5

No. 1367 . . . . . $6.00

S.S. CASSIOPEIA

Envisioned as an interplanetary passenger starship by Estes engineers. This impressive model is a challenge to build and beautiful to display. Dramatic flights up to 900 feet. Length: 32" (81.3 cm) Dia. .976" (24.8 mm) Wt. 2.2 oz. (62.5 g).

ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 C6-5 C6-7

No. 1369 . . . . . $6.00

SPACE TRANSPORTER AMERICA

Scale-like model suggests America's future "single-stage-to-orbit" (SSTO) concept. Gigantic space booster will carry huge payloads into Earth orbit and then return like an airplane. Kit includes plastic nose cone and display tail unit with scale engine nozzles. Really impressive flights. Length: 21.75" (55.3 cm) Dia. 1.637" (41.6 mm) Wing Span 7.0" (17.8 cm) Wt. 2.5 oz. (70 g).

ENGINES: B4-2 B6-4 (1st Flt.) C6-5

No. 1338 . . . . . $7.75

Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 14 oz.

SKILL LEVEL 3

"The Good Guy"

GALACTIC PIRATES™

PATROL CRUISER EXCALIBUR

Sleek and powerful, the Excalibur is the pride of the Intergalactic Patrol. Hidden in the ship's nose, on a retractable carriage is a quad mounted, choke barrel, Hyper-Ballistic Vacuum Gun. Speeds in the Star-Fall category are possible and range is reported to be 63 billion miles without refueling. Our scale model of this heroic spaceship delivers really spectacular flights.
Length: 20.125" (51.1 cm) Dia. 1.637" (41.6 mm)
Wt. 2.3 oz. (66 g).
ENGINES: A8-3 B4-4 (1st Flt.) B6-4 C5-3 C6-3

18

No. 1339 ..... $7.75

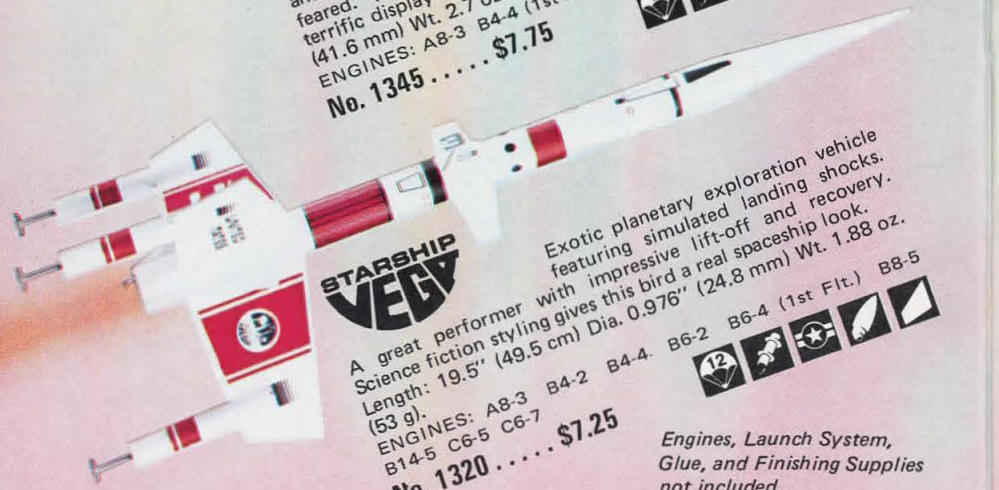
"The Bad Guy"

DRAGON SHIP 7

Dreaded Dragonship of the Outlaw Galactic Pirate Confederacy. Dragonship 7, based on the asteroid Greb-Sing is an outstanding example of evil technical genius. The ship's Twin Hydron-Stethode Cannon furnish a firepower of the Seventh Magnitude. This alien marauder from deep space is aptly named and universally feared. The Estes version of this villainous craft makes a terrific display model. Length: 16.75" (42.5 cm) Dia. 1.637" (41.6 mm) Wt. 2.7 oz. (77 g).
ENGINES: A8-3 B4-4 (1st Flt.) B6-4 B8-5 B14-5 C6-5

18

No. 1345 ..... $7.75



STARSHIP VEGA

A great performer with impressive lift-off and recovery. Exotic planetary exploration vehicle featuring simulated landing shocks. Science fiction styling gives this bird a real spaceship look.
Length: 19.5" (49.5 cm) Dia. 0.976" (24.8 mm) Wt. 1.88 oz. (53 g).
ENGINES: A8-3 B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 B14-5 C6-5 C6-7

12

No. 1320 ..... $7.25

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 12 oz.

STARBLAZER X-20

Envisioned as a mainstay in the space arsenal of the U.N. Earth Forces, the Starblazer X-20 is utilized for daily patrol and emergency intercept missions in Earth's outer atmosphere. This model sports great performance and exciting recoveries.
Length: 19.25" (48.9 cm) Dia. .976" (24.8 mm) Wt. 1.12 oz. (31.7 g).
ENGINES: A8-3 (1st Flt.) A8-5 B4-2 B4-4 B4-6 B6-2 B6-4 B6-6 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7

12

No. 1342 ..... $4.50

PIGEL 3

Very exotic, two-stage, interplanetary voyager. Features highly detailed futuristic nose cone, plus simulated touch-down struts. Envisioned as a deep space research vehicle of the 21st Century.
Length: 26.6" (67.6 cm) Dia. 1.325" (33.7 mm) Wt. 2.7 oz. (77 g).
ENGINES: SINGLE STAGE A8-3 B4-4 B6-4 (1st Flt.) B8-5 C6-5 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0

18

No. 1363 ..... $7.00

NEW!

SCISSOR-WING TRANSPORT

This exciting bird introduces the revolutionary new Scissor-Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and two-color decals. Length: 22.75" (57.7 cm) Body Dia. 0.976" (24.8 cm) Wing Span 16" (40.6 cm) Wt. w/pod 2.5 oz. (71 g). Wt. w/out pod 1.8 oz. (51 g).
ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3

10

No. 1265 ..... $8.50

SKILL LEVEL 3

GOBLIN

Powerful and fast, this spooky little kit really gets up and moves. You'll need a good recovery team to retrieve her as she'll reach 1,500 feet and more flight-after-flight with single "D" engine. Dramatic recovery with big, 2" wide, bright orange tracking streamer. Length: 14.32" (36.3 cm) Dia. 1.325" (33.6 mm) Wt. 2.0 oz. (56.6 g).
ENGINES: D11-9 D12-7 (1st Flt.) (A8-3, B4-4, B6-4, B8-5, B14-5, C6-5, and C6-7 with adapter EM-2050, not included.
See page 62.)

No. 1255 . . . . . $6.25

SEA STRIKE "D"

Scale-like ship-to-air missile with two-stage super "D" engine power. High performance design for incredible 1,800 foot flights. Realistic military appearance. Features tumble recovery booster and 12" parachute recovery for the upper stage. Length: 31" (78.75 cm) Dia. 1.34" (34 mm) Wt. 3.35 oz. (95 g).
ENGINES: SINGLE STAGE D11-9 D12-5 (1st Flt.) D12-7 UPPER STAGE D11-9 D12-7 BOOSTER STAGE D12-0

No. 1332 . . . . . $7.75

gyROC "WITH HELICOPTER RECOVERY"

An amazing and unique "helicopter" recovery system makes the Gyroc a must for your fleet. Lifts-off with main fins in straight-away position. Engine's ejection charge allows rear fin tips to snap sideways causing rotor effect and helicopter recovery. Unusual appearance and strange performance are sure to catch the interest of on-lookers. Length: 9.8" (24.9 cm) Dia. 0.736" (18.7 mm) Wt. 0.6 oz. (17 g).
ENGINES: 1/2A6-2 (1st Flt.) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5

No. 1224 . . . . . $3.25

—Photo by David Brownell—

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 10 oz.

MULTI·ROC

Really exciting multi-purpose sport flyer featuring large payload section, high performance parasite glider, and two-stage booster power. Can be flown in eight different flight configurations. Payload section is perfect for small telemetry or insect cargos. Parasite glider releases from upper stage rocket at apogee and is capable of glide times of more than 30 seconds. Booster section features pop-and-go staging plus tumble recovery.
Length: 24.5" (62.2 cm) Dia. .98" (24.9 mm) Wt. 1.94 oz. (55 g) with glider.
ENGINES: SINGLE STAGE A8-3 B4-4 B6-4 B8-5 B14-5 B14-7 C6-5 UPPER STAGE A8-5 (1st Flt.) B4-6 B6-6 B8-7 C6-7 BOOSTER STAGE A8-0 (1st Flt.) B6-0 B8-0 C6-0

No. 1329 . . . . . $9.00

LTV Scout

1/24th Scale

The Scout is a four-stage solid-propellant launch vehicle used for orbital, probe and re-entry missions. Since its first mission in 1960, Scout has been the launch vehicle for more than 90 missions, holding the record for consecutive successes among all NASA launch vehicles. We have chosen to scale the Italia version, known for its Uhura satellite which discovered the existence of "black holes" in space. This model is extremely detailed with many plastic parts. Length: 36.09" (91.67 cm) Dia. 1.637" (41.58 mm) Wt. 3.85 oz. (109 g).
ENGINE: C6-5

No. 1287 . . . . . $9.50

apogee II

Ultimate in 2-stage performance and reliability. See-through payload section lets you observe specimens without removing them from the rocket. Features 12" parachute and tumbling re-entry booster. Includes Tech Report on Multi-Staging. Pat. No. 3,292,302. (Decals not included.) Length: 14.7" (37.4 cm) Dia. 0.736" (18.7 mm) Wt. 0.6 oz. (17 g).
ENGINES: UPPER STAGE 1/2A6-4 (1st Flt.) A8-5 B4-6 B6-6 B8-7 B14-7 C6-7 BOOSTER 1/2A6-0 (1st Flt.) A8-0 B6-0 B8-0 B14-0 C6-0

No. 1205 . . . . . $5.25

SKILL LEVEL 3

NEW!

TARTAR

manufactured by Convair Corp. Semi-scale anti-aircraft missile is also utilized for ship-to-ship bombardment. Actual vehicle (59.1 cm) Dia. 1.325" (34 mm) Wt. 2.4 oz. (68 g). Length: 23.25" ENGINES: A8-3 B4-4 (1st Flt.) B6-4 B8-5 C5-3 C6-3 C6-5

12

No. 1360 ..... $5.50

OVER 3 FEET LONG!

PERSHING-1A

of the U.S. Army's surface-to-surface ballistic missile produced by Martin-Marietta and deployed with NATO units in Europe. Our 1/10 scale model is "D" engine powered with three color decals, pre-shaped fins, detailed molded plastic nose cone, and dual 24" parachute recovery. A 3/16" launch rod should be used for best lift-off results. The unusual fin configuration of this model makes it one of the most unique scale models ever to be offered. Additional historical background data is also included. Length: 41" (104.14 cm) Dia. 3.938" (100 mm) Wt. 11.5 oz. (326.03 g).

ENGINE: D12-3

No. 1268 ..... $24.95

Engines, Launch System, Glue, and Finishing Supplies not included. Avg. Ship. Wt. 32 oz.

FLYS TO 1600 FEET!

SPRINT

Highest performance in its class. Up to 1,600 ft. with C6-7 engine. Low drag ogive nose cone and reducer tail section. Contest winning elliptical fins, and streamer recovery. Length: 13.8" (35 cm) Dia. 0.976" (24.8 mm) Wt. 1.0 oz. (28 g).

ENGINES: 1/2A6-2 A8-3 (1st Flt.) A8-5 B4-6 B6-6 B8-5 B8-7 B14-7 C6-5 C6-7

No. 1249 ..... $4.50

OVER 3 FEET LONG!

HONEST JOHN

U.S. Army surface-to-surface, supersonic ballistic missile, one of the mainstays of the Army's atomic weapons capability. This highly detailed model uses a single "D" engine for power and comes with pre-shaped, accurately scaled fins and molded plastic nose cone. Spectacular recovery with giant, dual 24" molded plastic canopy 'chutes. Great for demonstrations and perfect as an impressive display model. A 3/16" launch rod is recommended for best lift-off results. Length: 37" (94 cm) Dia. 2.6" (66 mm) Wt. 14 oz. (397 g).

ENGINE: D12-3

No. 1269 ..... $24.95

German V-2

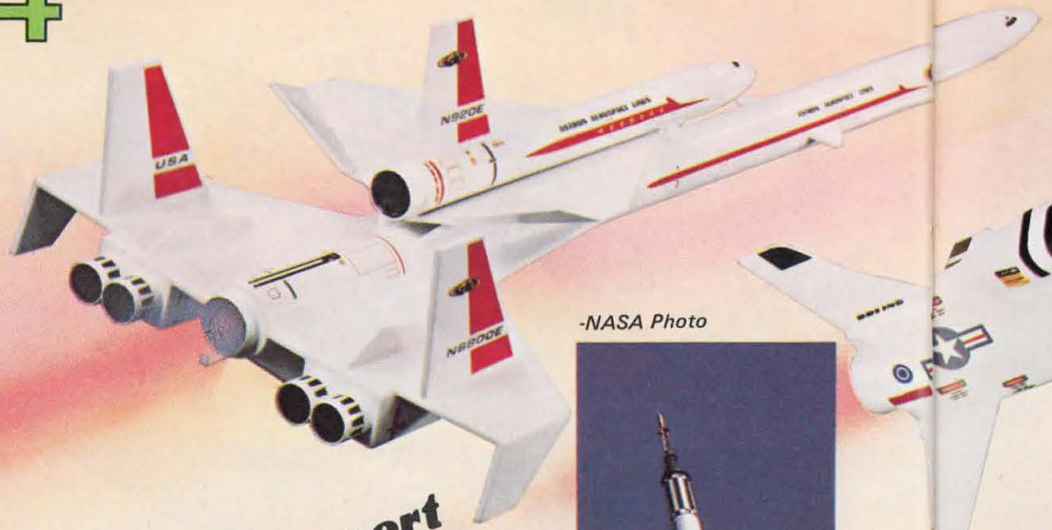
This giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemunde before and during World War II. This 1/19th scale Maxi-Brute features "D" engine power, detailed plastic nose cone, dual 24" parachute recovery and pre-shaped fins. Nose cone fits BT-101 tube. Model requires 3/16" launch rod for best lift-off performance. This historic reproduction will be the attention-getter at your launch site, and a handsome display model for your desk or bookshelf. Historical background is also included with instructions. Length: 33.5" (85 cm) Dia. 3.938" (100 mm) Wt. 12.5 oz. (354.38 g).

ENGINE: D12-3

No. 1267 ..... $24.95

NEARLY 3 FEET TALL!

SKILL LEVEL 4



Orbital Transport

Only a gleam in the eye of NASA, but it's flying for Estes rocketeers right now! Astonishingly realistic recovery system where mothership returns to Earth via huge 18" parachute and interplanetary vehicle glides home. Long and sleek, developed for both orbital and near-space missions. Transport vehicle and glider fly piggy-backed and separate at apogee for spectacular dual recovery.
TRANSPORT SHIP Length: 23" (58.4 cm) Dia. 0.976" (24.8 mm) Wing Span 7.9" (20 cm) Wt. 2 oz. (56 g).
RE-ENTRY VEHICLE Length: 8.6" (21.8 cm) Dia. 0.736" (18.7 mm) Wing Span 5" (12.7 cm) Wt. 0.5 oz. (14 g).
ENGINES: B4-2 B4-4 B6-2 B6-4 (1st Flt.) B8-5 B14-5 C6-5

18

No. 1242 ..... $7.50

-NASA Photo

MERCURY REDSTONE

Famous NASA vehicle which boosted Commander Alan Shepard on America's first manned space flight. Beautifully scaled to 1/42nd actual size our Mercury Redstone features intricately detailed fin assemblies and escape tower. Launchings simulate real space missions as Mercury capsule returns via bright orange and white 12" canopy 'chute and rocket descends on larger 18" parachute. Length: 23.5" (59.7 cm) Dia. 1.637" (41.6 mm) Wt. 2.1 oz. (60 g).
ENGINES: A8-3 B4-4 B6-4 (1st Flt.) B8-5 B14-5 C6-5

12 18

No. 1241 ..... $7.50

SKILL LEVEL 5

Engines, Launch System, Glue, and Finishing Supplies not included.
Avg. Ship. Wt. 14 oz.

-NASA Photo

1/14th Scale

BOEING A.L.C.M. CRUISE MISSILE The Boeing A.L.C.M. Cruise Missile is America's newest weapon system. Designed to be launched from a large aircraft, it can deliver a nuclear warhead with pin-point accuracy. Once launched, the wings and fins deploy and a ram-jet engine cuts-in providing high speed power to the missile. Sophisticated radar and on-board computer guide the Cruise Missile at tree-top altitudes. The Estes near-scale version of this vehicle is a challenging model with blow-molded plastic body, die-cut plastic fins & wings, and injection molded plastic parts. Wings swing-out for display. Length: 12.3" (31.2 cm) Wing Span 7.75" (19.69 cm) Wt. 2.79 oz. (78.8 g).
ENGINES: A8-3 B4-4 (1st Flt.) B6-4 B8-5 B14-5 C6-5

12

No. 1336 ..... $9.00

SKILL LEVEL 5

MARS LANDER

Displays futuristic concept for a planetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic upright touch-down. Big 18" bright orange and white canopy 'chute makes for a really great recovery sequence. Includes highly detailed body panels and colorful scale-like decals. Height: 12" (30.5 cm) Dia. 3.8" (96.5 mm) Landing Gear Span 13.2" (33.5 cm) Wt. 3.0 oz. (85 g).
ENGINES: B4-2 (1st Flt.) B6-2 C5-3 C6-3

18

No. 1243 ..... $12.00

SKILL LEVEL 5

(1/100th Scale)

SATURN V MOON ROCKET

A truly magnificent scale reproduction of the world's most famous rocket . . . the mighty Saturn V. First space vehicle to carry men to the moon and most recently utilized to place Skylab in orbit around Earth. Scaled to 1/100th of its actual size, our model stands an impressive 43-1/2" tall. Single "D" engine power gives this baby a spectacular Cape Canaveral style lift-off. Apollo capsule has life-like recovery with bright 12" orange and white 'chutes. Precision molded plastic engine nozzles and Apollo capsule with escape tower give detailed authenticity. Corrugated body wrap-ons make this one of our most precise scale models. Also includes Tech Report on clustering. Length: 43.5" (110 cm) Dia. 3.938" (100 mm) Wt. 9.9 oz. (280 g).

ENGINES: May be flown as a 3 engine cluster or single engine. Cluster Power: C5-3 or C6-3 (3 required). "D" Power: D12-3 (1 required).

24 12

No. 1236 . . . . . ONLY $29.95

Engines, Launch System, Glue, and Paint not included. Ship. Wt. 3 lbs. 5 oz.

—NASA Photos.

HOW HIGH DID IT GO?

AltiTrak™ *Altitude Finder*

Skill Level 1

Track your rocket to the top of its flight and instantly lock-in its altitude on the "new" AltiTrak altitude finder. Displays exact model rocket altitude on metric scale -- no guessing! (Conversion table included for feet.) A precision instrument made of durable plastic. Easy-to-assemble and looks like futuristic laser pistol. How high did it go? Now you'll know! Ship. Wt. 15 oz.

No. 2232 . . . . . ONLY $6.50

PREDICTED ALTITUDE COMPUTER

The Estes Pocker Size Altitude computer enables any rocketeer to predict his model rocket's altitude in a matter of seconds. Just move the center slide in a simple procedure for fast, accurate results. Three color calculator comes complete with instructions. Ship. Wt. 3 oz.

No. 9015 . . . . . ONLY $1.50

Designer's Special

Ideal parts assortment for the creative rocketeer. Develop your own R & D Program. Over 75 pieces at an excellent savings! Ship. Wt. 2 lbs.

Body Tubes	**Recovery Equipment**
2 BT-5	3 Shock Cord 1/8" x 18"
2 BT-20	1 Shock Cord 1/8" x 36"
2 BT-50	1 Shock Cord 1/4" x 36"
1 BT-55	1 Streamer Material 1" x 30"
1 BT-60	6 Screw Eyes
Nose Cones	**Miscellaneous**
1 BNC-5E	3 Engine Blocks (EB-20A)
1 BNC-5S	3 Engine Holders (EH-3)
1 BNC-20B	3 Engine Holders (EH-2)
1 BNC-20R	1 Engine Mount (EH-2050)
1 PNC-50K	1 Engine Mount (EH-2060)
1 PNC-50Y	1 Nose Block (NB-20)
1 PNC-55AC	1 Nose Block (NB-50)
1 PNC-60L	1 Stage Coupler (JT-55C)
	1 Stage Coupler (JT-60C)
Fin Material	1 Balsa Adapter (TA-2050A)
2 BFS-20	1 Multi-Purpose Paper Adapter Set (TA-1)
2 BFS-30	12 Launch Lugs (2-3/8" long)
2 BFS-40	1 Alpha Book of Model Rocketry
Parachutes	1 Fin Pattern Sheet No. 2
1 PK-18	1 Fin Pattern Sheet No. 3
2 PK-12	
1 PK18	
1 PK-24	

No. 1463 . . ONLY $16.95

Launch Equipment

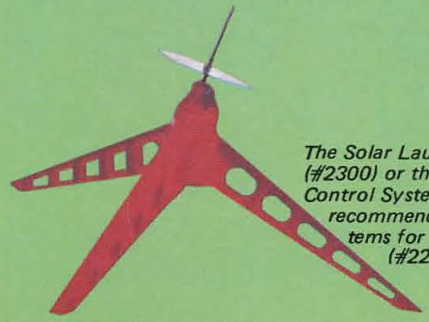
Big Foot™

"Designed for the Big Ones!"

MODEL ROCKET LAUNCH CONTROL SYSTEM

The Estes Big Foot launch control system is capable of launching all Estes models including Maxi-Brutes. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot-print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x 36" two-piece launch rod, adjustable swivel mount to compensate for wind direction which is adaptable to either 1/8" or 3/16" launch rods, and has legs which remove easily for compact storage. This launch control unit is engineered for simple, quick assembly and features safety key, continuity check light, ignition button and 15 feet of launch cable. (Uses 4 alkaline type, "D" cell batteries and Estes Solar Igniters #2301 – not included.) Ship. Wt. 2 lbs.

No. 2208 . . . . . ONLY $17.95



The Solar Launch Controller (#2300) or the Astron Launch Control System (#2212) are the recommended launch control systems for use with the Porta-Pad (#2217).

PORTA-PAD

PLASTIC LAUNCH PAD

Space-age designed, the Porta-Pad is rugged enough to take the stress of countless launchings, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, girder construction. Orange plastic legs snap off for storage in range box. Friction grip secures rod firmly. Accomodates standard 1/8" rod (#2234) or heavy-duty 3/16" Maxi-Rod (#2239). Tilt adjustment allows you to compensate for wind. Ship. Wt. 1 lb. 8 oz.

No. 2217 . . . . . ONLY $7.75

Astron Launch Control System

Heavy-Duty Launch Controller features futuristic design and provides greater reliability with simplified assembly. Bright orange plastic controller gives realistic ignition system appearance. Recommended for 6 or 12 volt power sources. No need to remove battery from car, simply connect launch system's battery clips to terminals. Features include arming lamp, safety key, launch button, battery clips, micro-clips, and 18 feet of launch cable. Ship. Wt. 12 oz.

No. 2212 . . . . . ONLY $7.75

SOLAR LAUNCH CONTROLLER

MODEL ROCKETRY'S MOST ADVANCED LAUNCH SYSTEM

The Solar Launch Control System should be standard equipment in your range box. This futuristically designed launch control unit requires only 4 alkaline type AA size batteries for power. Advanced shape allows for perfect hand-held control. Unit is easily assembled in minutes and features safety key, continuity check lamp, ignition button, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. Micro-clips are presoldered. Use with Estes Solar Igniters (#2301). (Batteries not included.) Length: 6.1" (15 cm) Ht. 2.4" (6 cm). Width 1.44" (4 cm) Wt. (with batteries) 7 oz. (199 g). Ship. Wt. 8 oz.

No. 2300 . . . . . ONLY $8.95

Launch Supplies

1/8" DIA. TWO-PIECE LAUNCH ROD: Handy collapsible two-piece rod for portable launchers. Pieces slip together to make a 36" long rod. Base rod has a diameter of 1/8". Ship. Wt. 6 oz.
No. 2234 . . . . . $1.15

ADD-ON ROD: Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 54" length. Ship. Wt. 6 oz.
No. 2236 . . . . . $ .60

3/16" DIA. MAXI-ROD: Perfect for launching Maxi-Brute kits and other large rockets. Fits Porta-Pad Tripod (#2217) and Big Foot Launch Pad (#2208). Two-piece construction 36" long, light-weight aluminum launch rod. Collapsible for easy storage. Ship. Wt. 12 oz.
No. 2239 . . . . . $2.25

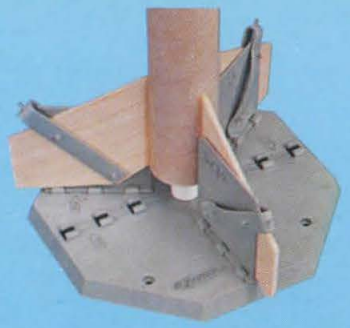
MICRO-CLIPS: Equip your launcher with the best. Spring-loaded solid steel clips connect lead wires to igniters. Easy-to-clean and highly conductive with flat contact surfaces. Only 1.1 inches long. Attach to leads with or without solder. Ship. Wt. 1 oz.
No. 2247 . . . . . 2 for $ .95

LAUNCH ROD SAFETY CAP WITH UNIVERSAL SAFETY KEY

LAUNCH ROD SAFETY CAP with UNIVERSAL SAFETY KEY: For Launch Pad Safety! Includes plastic launch rod cap, universal safety key, and elastic cord. (Fits all Estes launch control systems except X-15 Starter Kit, (#0715). Ship. Wt. 4 oz.
No. 2205 . . . . . $ .60

BLAST DEFLECTOR PLATE: Slip-on metal deflector plate fits any launcher using 1/8" or 3/16" rods. Protects launcher base from rocket blast. Four-inch diameter. Ship. Wt. 5 oz.
No. 2241 . . . . . $1.25

BATTERY CLIPS: Hook-up to car batteries. Heavy-duty clips connect to terminals up to 1" in dia. With insulators. Ship. Wt. 5 oz.
No. 2245 . . . . . 2 For $1.15



ESTES FIN ALIGNMENT GUIDE

Position and glue fins quickly and easily. Fits body tubes up to BT-101. Designed for either 3 or 4 finned rockets, aligning fins at 90° or 120° to each other. Easily assembled with slip-together plastic parts. Adjusts quickly with plastic fin position clips. Ship. Wt. 3 lbs.

No. 2231 . . . . . ONLY $6.50

EMERGENCY REPAIR KIT

A must for every range box. Features many essential materials for "on-the-spot" repair of your model rockets. Ship. Wt. 8 oz.

INCLUDES:
- Sandpaper
- Screw Eyes
- White Glue Packet
- Launch Rod Safety Cap
- Universal Safety Key
- Recloseable Pouch
- Recovery Wadding
- 12" Parachute
- 1/8" and 1/4" Shock Cords
- 144" Shroud Line
- Tape Discs
- Launch Lugs
- Shock Cord Mounts

No. 2233 . . . . . ONLY $2.00

PHANTOM SKILL LEVEL 1

Educational, See-Thru Rocket with Recovery System, 10" Parachute, Engine Mount, and Cut-Away Engine!

Perfect static demonstration model for workshops and presentations. Shows all internal components of a model rocket plus special cut-away version of C6-5 model rocket engine.

Ideal for displays and exhibits.

Length: 12.6" (32.0 cm) Dia. 0.976" (24.8 mm) Wt. 1.35 oz. (38.3 g) Ship. Wt. 3 oz.

No. 1207 . . . . . ONLY $4.25

START A MODEL ROCKET PROGRAM IN YOUR SCHOOL! Want to get your teacher interested in a model rocketry program? Send us (1) your teacher's name, (2) the name of your school, and (3) the school's address (include street address, city, state, and zip). If your teacher has a specialty (such as science, industrial arts, physics, etc.), tell us. Send this information to Education Dept., Estes Industries, Dept. 51, Penrose, CO 81240. We will send your teacher information on how to start an educational model rocketry program.

ATTENTION 4-H, Scout, Cub, Camp, and Recreation Leaders: For information on how model rocketry can help in your own program write: Education Department, Estes Industries, Dept. 51, Penrose, CO 81240. State type of group and what you would like to do.

Model Rocket Engines

ESTES A DAMON COMPANY

- ★ **Reliability-Proven In Over 175 Million Safe Launchings!**
- ★ **Quality-Tested for High Performance Flights!!**
- ★ **The Finest Engine Made . . . You Can Depend On It . . . . For Every Flight Application!!!**

The design and development of the Estes model rocket engine was the real beginning of the safe, educational and exciting hobby that model rocketry has become.

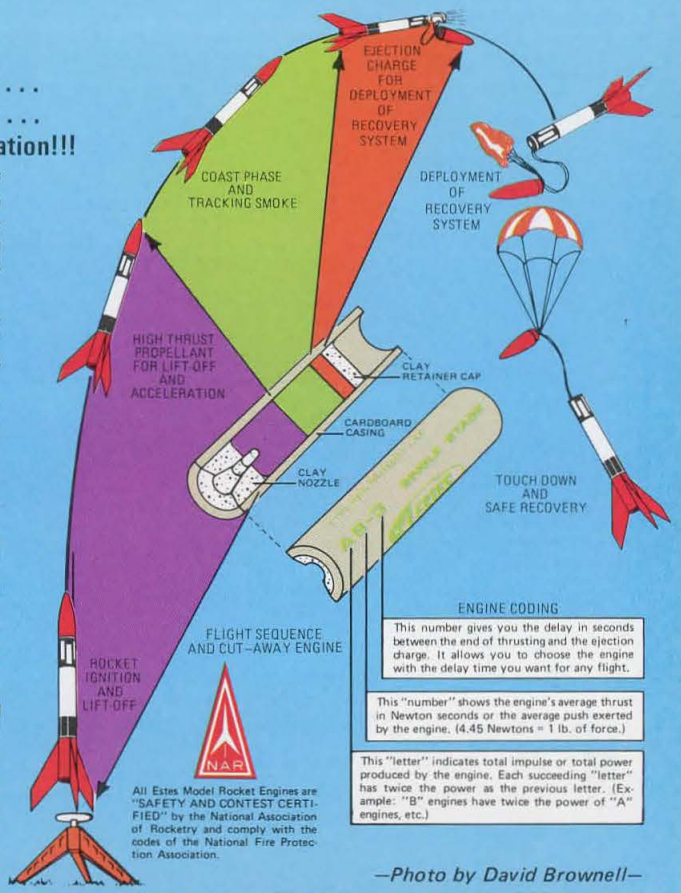
Today's modern rocket engine is the result of over 21 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his use.

The energy-packed, solid propellant Estes model rocket engine is a complete power system for your rocket. It is designed and pre-manufactured to perform all power functions for dependable launch and activation of a recovery system. In one compact package it provides thrust for quick lift-off and acceleration to high altitudes, allows for a timed delay period to reach peak altitude while delivering a smoke trail for easy tracking, and supplies ejection power for the parachute or other recovery system for your rocket's safe return to Earth.

Reliability-proven in over 175 million launchings. Estes engines are manufactured under strict, quality-controlled conditions within exacting tolerance limits. You can count on them for consistent performance from one launch to the next. You'll launch with confidence in all your model rocketry activities.

More than 3% of all Estes model rocket engines produced are static tested to insure rocketeers of the highest performing, most reliable model rocket engines made. Here, an Estes employee static tests an engine for overall performance and safety in the advanced, Estes engine testing facility.

Graphic explanation of a model rocket engine's basic construction and functions.


EJECTION CHARGE FOR DEPLOYMENT OF RECOVERY SYSTEM
COAST PHASE AND TRACKING SMOKE
DEPLOYMENT OF RECOVERY SYSTEM
HIGH THRUST PROPELLANT FOR LIFT-OFF AND ACCELERATION
CLAY RETAINER CAP
CARDBOARD CASING
CLAY NOZZLE
TOUCH DOWN AND SAFE RECOVERY
ROCKET IGNITION AND LIFT-OFF
FLIGHT SEQUENCE AND CUT-AWAY ENGINE
ENGINE CODING
This number gives you the delay in seconds between the end of thrusting and the ejection charge. It allows you to choose the engine with the delay time you want for any flight.
This "number" shows the engine's average thrust in Newton seconds or the average push exerted by the engine. (4.45 Newtons = 1 lb. of force.)
This "letter" indicates total impulse or total power produced by the engine. Each succeeding "letter" has twice the power as the previous letter. (Example: "B" engines have twice the power of "A" engines, etc.)
All Estes Model Rocket Engines are "SAFETY AND CONTEST CERTIFIED" by the National Association of Rocketry and comply with the codes of the National Fire Protection Association.

—Photo by David Brownell—

ROCKET ENGINE SELECTION CHART

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec①	Total Impulse n-sec②	Time Delay (± 15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz.	Initial Weight G.	Propellant Weight Oz.	Propellant Weight G.
SINGLE STAGE ENGINES										**GREEN LABEL**		
1593	1/2A6-2	$2.25	0.28	1.25	2 sec.	2.5 oz.	46 oz.	0.20 sec.	0.53	15.0	0.055	1.56
1598	A8-3	$2.35	0.56	2.50	3 sec.	4.0 oz.	48 oz.	0.32 sec.	0.57	16.2	0.110	3.12
1601	B4-2	$2.45	1.12	5.00	2 sec.	4.0 oz.	48 oz.	1.20 sec.	0.70	19.8	0.294	8.33
1602	B4-4	$2.45	1.12	5.00	4 sec.	3.5 oz.	48 oz.	1.20 sec.	0.74	21.0	0.294	8.33
1605	B6-2	$2.45	1.12	5.00	2 sec.	4.5 oz.	48 oz.	0.83 sec.	0.68	19.3	0.220	6.24
1606	B6-4	$2.45	1.12	5.00	4 sec.	4.0 oz.	48 oz.	0.83 sec.	0.71	20.1	0.220	6.24
1620	B8-5*	$2.55	1.12	5.00	5 sec.	5.0 oz.	5 lb.	0.60 sec.	0.68	19.3	0.220	6.24
1617	C5-3	$2.65	2.25	10.00	3 sec.	8.0 oz.	5 lb.	2.10 sec.	0.90	25.5	0.450	12.70
1613	C6-3	$2.65	2.25	10.00	3 sec.	4.0 oz.	48 oz.	1.70 sec.	0.88	24.9	0.440	12.48
1614	C6-5	$2.65	2.25	10.00	5 sec.	4.0 oz.	48 oz.	1.70 sec.	0.91	25.8	0.440	12.48
UPPER STAGE ENGINES ③										**PURPLE OR BLUE LABEL**		
1594	1/2A6-4	$2.25	0.28	1.25	4 sec.	1.0 oz.	46 oz.	0.20 sec.	0.54	15.3	0.055	1.56
1599	A8-5	$2.35	0.56	2.50	5 sec.	2.0 oz.	48 oz.	0.32 sec.	0.62	17.6	0.110	3.12
1604	B4-6	$2.45	1.12	5.00	6 sec.	1.5 oz.	48 oz.	1.20 sec.	0.78	22.1	0.294	8.33
1607	B6-6	$2.45	1.12	5.00	6 sec.	2.0 oz.	48 oz.	0.83 sec.	0.78	22.1	0.220	6.24
1621	B8-7*	$2.55	1.12	5.00	7 sec.	2.5 oz.	5 lb.	0.60 sec.	0.72	20.4	0.220	6.24
1615	C6-7	$2.65	2.25	10.00	7 sec.	2.5 oz.	48 oz.	1.70 sec.	0.95	26.9	0.440	12.48
BOOSTER ENGINES										**RED LABEL**		
1595	1/2A6-0	$2.25	0.28	1.25	none	4.0 oz.	46 oz.	0.18 sec.	0.48	13.6	0.055	1.56
1600	A8-0	$2.35	0.56	2.50	none	4.0 oz.	48 oz.	0.30 sec.	0.51	14.2	0.110	3.12
1608	B6-0	$2.45	1.12	5.00	none	4.0 oz.	48 oz.	0.80 sec.	0.58	16.4	0.220	6.24
1622	B8-0*	$2.55	1.12	5.00	none	6.0 oz.	5 lb.	0.60 sec.	0.60	17.0	0.220	6.24
1616	C6-0	$2.65	2.25	10.00	none	4.0 oz.	48 oz.	1.68 sec.	0.80	22.7	0.440	12.48

Complete instructions and Solar Rocket Igniters are included with each package of Estes model rocket engines.

*Series II engines have semi-core-burning grain with large propellant burning area for high initial thrust with short thrust duration. New "B8" type engines replace previous "B14" type engines.

All engines listed on this page are 2.75 in. (6.99 cm) long and 0.690 in. (1.75 cm) dia.

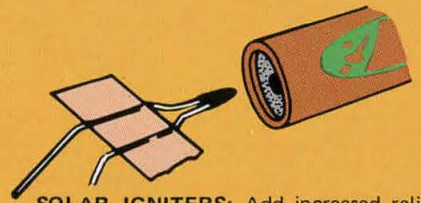
Ship. Wt. of each package of engines is approximately 4 oz.

IMPORTANT-IMPORTANT

All the rockets shown in this catalog can be flown over and over again. Simply replace the engine, igniter, and recovery wadding for each new flight.

ASTRON IGNITERS: Easy to use for reliable ignition every time. Recommended for launch systems using 6 or 12 volt car batteries or 12 volt lantern batteries. Installation procedure featured on engine instructions. (Patent No. 3,363,559). *Not recommended for Solar Launch Controller (#2300) or Big Foot Launch Control System (#2208).* Ship. Wt. 1 oz.

No. 2225 . . . . . 6 for $1.15



SOLAR IGNITERS: Add increased reliability at lift-off with Estes "high performance" Solar Igniters. This uprated igniter is designed especially for the Solar Launch Controller (#2300) and Big Foot Launch Control System (#2208). Features easy engine installation and is suitable for all Estes launch control systems. Unique four element design makes it the most dependable igniter made. Ship. Wt. 1 oz.

No. 2301 . . . . . 6 for $1.15

MINI-ENGINE SELECTION CHART

Prod. No.	Engine Type	Prices 4 for	Total Impulse lb-sec①	Total Impulse n-sec②	Time Delay (± 15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz.	Initial Weight G.	Propellant Weight Oz.	Propellant Weight G.
SINGLE STAGE ENGINES										**GREEN LABEL**		
1500	1/4A3-2T	$2.35	0.14	0.625	2 sec.	1 oz.	23 oz.	0.18 sec.	0.173	4.9	0.031	0.88
1503	1/2A3-2T	$2.45	0.28	1.25	2 sec.	2 oz.	28 oz.	0.36 sec.	0.198	5.6	0.062	1.75
1506	A3-2T	$2.55	0.56	2.50	2 sec.	3 oz.	28 oz.	0.86 sec.	0.254	7.2	0.124	3.50
1507	A3-4T	$2.55	0.56	2.50	4 sec.	2 oz.	28 oz.	0.86 sec.	0.268	7.6	0.124	3.50
1511	A10-3T	$2.55	0.56	2.50	3 sec.	5 oz.	48 oz.	0.26 sec.	0.277	7.9	0.133	3.78
UPPER STAGE ENGINES ③										**PURPLE OR BLUE LABEL**		
1501	1/4A3-4T	$2.35	0.14	0.625	4 sec.	1 oz.	23 oz.	0.18 sec.	0.187	5.3	0.031	0.88
1504	1/2A3-4T	$2.45	0.28	1.25	4 sec.	1 oz.	28 oz.	0.36 sec.	0.212	6.0	0.062	1.75
1508	A3-6T	$2.55	0.56	2.50	6 sec.	1 oz.	28 oz.	0.86 sec.	0.282	8.0	0.124	3.50
BOOSTER ENGINES										**RED LABEL**		
1505	1/2A3-0T	$2.45	0.28	1.25	none	3 oz.	28 oz.	0.36 sec.	0.166	4.7	0.062	1.75
1509	A3-0T	$2.55	0.56	2.50	none	3 oz.	28 oz.	0.86 sec.	0.226	6.4	0.124	3.50
1510	A10-0T	$2.55	0.56	2.50	none	5 oz.	48 oz.	0.26 sec.	0.235	6.7	0.133	3.70

Mini-Engines are 1.75 in. (4.45 cm) long and .500 in. (1.27 cm) dia. Ship. Wt. of each package of mini-engines is approximately 2-1/2 oz.

MIGHTY "D" ENGINES

Recommended Only for Experienced Rocketeers!

Prod. No.	Engine Type	Prices 3 for	Total Impulse lb-sec①	Total Impulse n-sec②	Time Delay (± 15%)	Max. Lift Wt.	Max. Thrust	Thrust Duration	Initial Weight Oz.	Initial Weight G.	Propellant Weight Oz.	Propellant Weight G.
SINGLE STAGE ENGINES										**GREEN LABEL**		
1666	D12-3	$4.95	4.48	20.0	3 sec.	14 oz.	9 lb.	1.70 sec.	1.49	42.2	0.879	24.93
1667	D12-5	$4.95	4.48	20.0	5 sec.	10 oz.	9 lb.	1.70 sec.	1.52	43.1	0.879	24.93
UPPER STAGE ENGINES ③										**PURPLE OR BLUE LABEL**		
1668	D12-7	$4.95	4.48	20.0	7 sec.	8 oz.	9 lb.	1.70 sec.	1.55	44.0	0.879	24.93
1669	D11-9	$4.95	3.37	15.0	9 sec.	8 oz.	6.3 lb.	1.40 sec.	1.51	42.9	0.65	18.50
BOOSTER ENGINES										**RED LABEL**		
1665	D12-0	$4.95	4.48	20.0	none	14 oz.	9 lb.	1.70 sec.	1.44	40.9	0.879	24.93

RECOVERY WADDING: Provides protection from hot ejection gases for parachutes and streamers. Each package contains approximately 75 – 4-1/2" squares – enough wadding for up to 25 flights. Instructions for installation are included in each package. Ship. Wt. 6 oz.

No. 2274 . . . . . $1.25

"D" engines are 2.75 in. (6.99 cm) long and 0.945 in. (2.40 cm) dia.

Ship. Wt. of each package of "D" engines is approximately 6-1/2 oz.

Complete instructions and Solar Rocket Igniters are included with each package of Estes model rocket engines.

NOTES:

① Pound-seconds (Figures shown are maximum.)

② Newton-seconds (Figures shown are maximum.)

③ Or Single Stage Engine if used in very light rocket.

WIN $75.00 IN FREE MERCHANDISE!!
ENTER THE DESIGN OF THE MONTH CONTEST

Have an idea for an original design? Enter our Design of the Month competition today. Your design could be published in an issue of Model Rocket News. Simply follow the rules below.

1. All entries become the property of Estes Industries and cannot be returned.
2. Employees of Estes Industries and members of their immediate families are not eligible.
3. Any type of model rocketry design can be entered (rockets, boost-gliders, launching or recovery devices, etc.).
4. Designs should be new, original, and different, but they also need to be workable. The goal is to develop something new that other rocketeers can build and use successfully, too.
5. Entries will be judged on practicality, originality, neatness, completeness, and clarity. All plans must be flight tested and proven.
6. Your design entry should include a parts list and any instructions or diagrams you feel would be helpful.
7. Please do not send the actual model as it cannot be returned.
8. Photos of entries are greatly appreciated, but are not required.
9. You may send as many entries as you like.
10. New contest every month.
11. All designs reaching Estes Industries during the calendar month will be entered in that month's competition. (Date of receipt, not postmark, will determine the month in which a design will be entered.)
12. If two or more exceptional entries are received during any month, the judges may, at their discretion, make identical first-place awards or give additional honorable mentions.
13. Designs should be sent to the Design of the Month, c/o MRN Editor, Estes Industries, Inc., Penrose, Colorado 81240. However, all plans sent to us which are not specifically addressed to another contest or department will be automatically placed in the Design of the Month Competition.
14. Each month the designer of the winning entry will receive a certificate entitling them to $75.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail.

GOOD LUCK!!!

NAR/HIAA Model Rocketry Safety Code

1. **Construction** — My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
2. **Engines** — I will use only pre-loaded factory-made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
3. **Recovery** — I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
4. **Weight Limits** — My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff and the engine will contain no more than 113 grams (4 ozs.) of propellant.
5. **Stability** — I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
6. **Launching System** — The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 15 feet from any rocket that is being launched.
7. **Launch Safety** — I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
8. **Flying Conditions** — I will not launch my model rockets in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.
9. **Launch Area** — My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use non-flammable recovery wadding in my rockets.
10. **Jet Deflector** — My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
11. **Launch Rod** — To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.
12. **Power Lines** — I will never attempt to recover my rocket from power lines or other dangerous places.
13. **Launch Targets & Angle** — I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.
14. **Pre-Launch Test** — When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

As a member of the Estes Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.
Signature _____

Recovery Supplies

PARACHUTE KITS: Get the best in parachute recovery! Two-color printed plastic 'chutes give maximum visibility with easy-trak design. Lightweight, durable, and easily folded. These 'chutes are only 0.0075" thick, allowing the most material to be packed into the least body space. Each kit comes complete with 'chute material, tape discs, and shroud lines. Ship. Wt. 2 oz.

Prod. No.	Description	Parachute Diameter	Net. Weight	Price Each
2261	PK-8	8 inches	.035 oz.	$1.00
2264	PK-12	12 inches	.078 oz.	$1.10
2267	PK-18	18 inches	.144 oz.	$1.15
2271	PK-24	24 inches	.298 oz.	$1.35

SHOCK CORD: Specify width when ordering. Ship. Wt. 1 oz.
1/8" wide: Net Wt. 0.039 oz.
No. 2276 . . . . . $ .50
1/4" wide: Net Wt. 0.078 oz.
No. 2277 . . . . . $ .55

Also 36" long for greater stretch on those larger birds.
1/8" wide: Net Wt. 0.078 oz.
No. 85744 . . . . . $ .60

TAPE DISCS: Fasten shroud lines to plastic parachutes or streamers with these 3/4" dia. pressure sensitive Tape Discs. In sheets of 6 discs. Ship. Wt. 1 oz.
No. 2294
4 sheets of 6 . . . . . $1.10

STREAMER MATERIAL: Bright orange, flame-resistant crepe paper streamers. In 7-1/2 foot lengths, enough for two to eight streamers. Specify size when ordering. Ship. Wt. 1 oz.
1" wide: Net Wt. .092 oz.
No. 2341 . . . . . $1.85
2" wide: Net Wt. .184 oz.
No. 2343 . . . . . $2.10

SCREW EYES: Specify size when ordering. Ship. Wt. for 6 eyes, 1 oz.
LARGE EYE:
1" long; .04 oz.
No. 2280 . . . . . $1.00
SMALL EYE:
3/4" long; .03 oz.
No. 2279 . . . . . $ .95
EXTRA SMALL EYE:
5/8" long; .01 oz.
No. 2281 . . . . . $ .85

SHROUD LINES: Build reliable, durable, custom parachutes with this strong, hard surface shroud line cord. Comes in 70 yard spools. Ship. Wt. 5 oz.
No. 2340 . . . . . $1.00

TAPE STRIPS: For top strength, low bulk and low weight, fasten shroud lines with these 1/4" x 3/4" tape strips, in sheets of 12 strips. Ship. Wt. 1 oz.
No. 38412
6 sheets of 12 . . . . . $1.15

SNAP SWIVELS: For quick changes and reduced tangling in your recovery systems, use these tiny 1" long snap swivels. Net Wt. .01 oz. Ship. Wt. for 12 swivels, 1 oz.
No. 2292 . . . . . $1.50

ESTES
A DAMON COMPANY

TECHNICAL REPORTS
SPECIAL PUBLICATIONS

Rocket Stability — TR-1
No. 84721 . . . . . $ .50

Multi-Staging — TR-2
No. 84722 . . . . . $ .50

Altitude Tracking — TR-3
No. 84723 . . . . . $ .50

Rear Engine Boost Gliders — TR-4
No. 84724 . . . . . $ .50

Cluster Techniques — TR-6
No. 84726 . . . . . $ .50

Front Engine Boost Gliders — TR-7
No. 84727 . . . . . $ .50

Model Rocketry Study Guide - TR-8
No. 84728 . . . . . $1.00

Altitude Prediction Charts — TR-10
No. 84730. . . . . $1.50

Aerodynamic Drag of Model Rockets — TR-11
No. 84731 . . . . . $1.50

Model Rocket Engines — TN-1
No. 84700 . . . . . $ .50

Model Rocket Engine Performance — TN-2
No. 84701 . . . . . $ .50

Elementary Mathematics of Model Rocket Flight — TN-5
No. 84704 . . . . . $ .50

Recovery Techniques — TN-6
No. 84705 . . . . . $ .50

ALPHA - Mini Book of Model Rocketry
No. 901022 . . . . . $ .25

Model Rocket Launch Systems
No. 2811 . . . . . $ .50

Estes Guide For Aerospace Clubs
No. 2817 . . . . . $ .75

Space Age Technology
No. 2813 . . . . . $1.50
A "Teacher's" Manual (no. 2823) is available to educators for $1.50.

Estes Model Rocket Contest Guide
No. 2815 . . . . . $ .75

The Laws of Motion and Model Rocketry
No. 2821 . . . . . $ .35

Aerospace Education and Model Rocketry
No. 2816 . . . . . $1.50
(Single copies free to educators requesting it on school stationery.)

The Alpha Book of Model Rocketry
No. 2820 . . . . . $ .75

Industrial Arts Teachers Manual for Model Rocketry
No. 2810 . . . . . $1.00

Model Rocketry Technical Manual
No. 2819 . . . . . $ .35

Building a Wind Tunnel — TR-5
No. 84725 . . . . . $ .50

Is That Parachute Too Big? TN-3
No. 84702 . . . . . $ .50

RECROC - Recreational Program
No. 2426 . . . . . $1.25

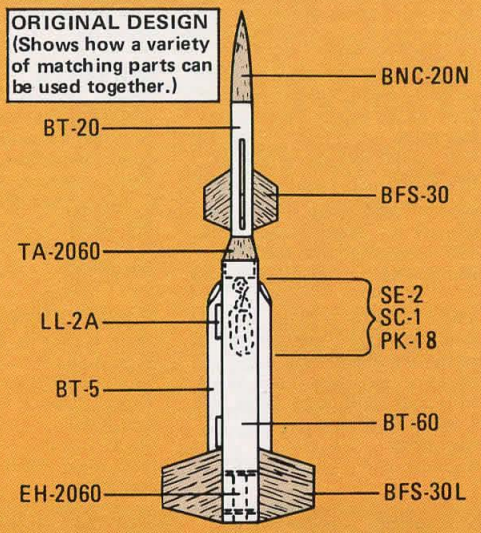
Camp Leader's Model Rocketry Manual
No. 2822 . . . . . $1.00

Build Your Own Design With Estes Quality Model Rocket Parts

Once you have constructed several model rocket kits and have become familiar with the basic Estes Technical Reports you will no doubt have a variety of ideas for unique designs of your own. In order to select the proper parts for your original design it is important for you to understand our system of parts description numbers.

Nearly all matching Estes parts have the same series description number. Those which do not feature an additional explanation as to where they can be used. Normally, parts listing the same series description number will be interchangeable with each other. For instance, a # 20 body tube (BT-20) would mate with a #20A balsa nose cone (BNC-20A), a #20C payload section (PS-20C), or a #20B engine block (EB-20B). Further, a #2060 tube adapter (TA-2060) will adapt a BT-20 to a BT-60, and a #5055 centering ring (AR-5055) will center a BT-50 within a BT-55. By using balsa or paper adapters almost any combination of parts can be joined together. For ordering, be sure to use both the product number and the series description number (name).

ORIGINAL DESIGN
(Shows how a variety of matching parts can be used together.)



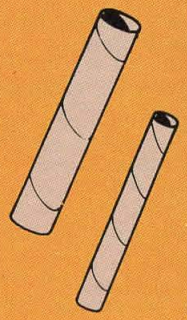
Model Rocket Parts

Fin Stock

Top quality balsa sheeting for making fins for model rockets. For maximum strength, grain of wood should follow the leading edge of fin.

Prod. No.	Description	Price	Dimensions (In Inches)	Weight in Oz. Net.	Ship.	Major Use
3164	BFS-20	3 for $1.00	1/16x3x9	.130	4	High Performance
3166	BFS-20L	3 for $1.20	1/16x3x12	.173	6	High Performance
3168	BFS-30	3 for $1.05	3/32x3x9	.150	4	Sport Models
3170	BFS-30L	3 for $1.25	3/32x3x12	.200	6	Sport Models
3172	BFS-40	3 for $1.20	1/8x3x9	.200	4	Cluster Rockets
3174	BFS-40L	3 for $1.25	1/8x3x12	.265	6	Glider Wings

Body Tubes



Prod. No.	Description	Price Each	Length	Inside Diameter	Outside Diameter	Wall Thickness	Weight in Oz. Net.	Ship.
Spiral-Wound Paper Tube for nose sections and strap-on payloads.								
3070	BT-5	$ .95	18"	0.515"	0.541"	0.013"	.219	11
Spiral-Wound Paper Tube, for competition and sport models.								
3072	BT-20	$1.00	18"	0.710"	0.736"	0.013"	.288	11
Spiral-Wound Paper Tube, for sport and high performance payload models.								
3073	BT-50	$1.10	18"	0.950"	0.976"	0.013"	.378	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3074	BT-55	$1.35	18"	1.283"	1.325"	0.021"	.672	11
Spiral-Wound Paper Tube, for sport and demonstration models.								
3075	BT-60	$1.45	18"	1.595"	1.637"	0.021"	.960	11
Spiral-Wound Paper Tube, for monster models and tail rings.								
3076	BT-70	$1.90	17.5"	2.175"	2.217"	0.021"	1.300	14
Spiral-Wound Paper Tube, for giant-scale models.								
30438	BT-101	$2.50	16.5"	3.896"	3.938"	0.021"	1.974	16

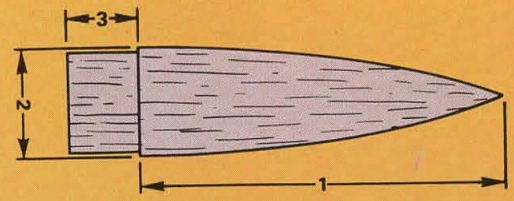
Engine Blocks

Prod. No.	Descirption	Price 3 for	Outside Dia.	Inside Dia.	Length	Fits	Weight in Oz. Net.	Ship.
3131	EB-20A	$ .75	.708"	.65"	1/4"	BT-20	.009	1

Nose Cones

Nose cone dimensions listed in columns 1,2, and 3.

In "Description" column BNC stands for balsa nose cone and PNC for plastic nose cone.



Shape	No.	Prod. No.	Description	Price Each	Dimensions 1	2	3	Average Weight	Ship. Wt.
BT-5	1	8002	BNC-5V	$ .95	3/4"	0.541"	1/4"	0.013 oz.	1 oz.
	2	8000	BNC-5E	$ .95	1-3/8"	0.541"	1/4"	0.020 oz.	1 oz.
	3	8001	BNC-5S	$ .95	1-1/2"	0.541"	1/4"	0.016 oz.	1 oz.
	4	8003	BNC-5W	$1.10	2-7/8"	0.541"	1/4"	0.039 oz.	2 oz.
BT-20	5	8004	BNC-20A	$ .85	13/16"	0.736"	1/4"	0.03 oz.	1 oz.
	6	8005	BNC-20B	$1.00	1-11/16"	0.736"	5/16'	0.05 oz.	1 oz.
	7	8007	BNC-20R	$1.10	2-3/4"	0.736"	3/8"	0.07 oz.	2 oz.
	8	8006	BNC-20N	$1.20	2-3/4"	0.736"	1/2"	0.08 oz.	2 oz.
BT-50	9	8008	BNC-50J	$1.10	1-3/8"	0.976"	1/2"	0.08 oz.	4 oz.
	10	8009	BNC-50K	$1.25	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	10	71008	PNC-50K	$1.05	2-3/4"	0.976"	1/2"	0.13 oz.	4 oz.
	11	8010	BNC-50X	$1.35	3-1/4"	0.976"	1/2"	0.15 oz.	4 oz.
	12	8011	BNC-50Y	$1.60	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
	12	71009	PNC-50Y	$1.45	4-3/8"	0.976"	3/8"	0.16 oz.	6 oz.
BT-55	13	8012	BNC-55AA	$1.55	3-1/8"	1.325"	1/2"	0.15 oz.	4 oz.
	14	8014	BNC-55F	$1.85	3-7/8"	1.325"	1/2"	0.19 oz.	4 oz.
	15	71070	PNC-55AC	$1.95	5-3/8"	1.325"	3/8"	0.32 oz.	6 oz.
	16	71075	PNC-55AO	$1.90	5"	1.325"	3/4"	0.43 oz.	4 oz.
BT-60	17	8020	PNC-60L	$1.60	3-1/8"	1.637"	5/8"	0.34 oz.	4 oz.
	18	8021	PNC-60AH	$2.85	6-5/8"	1.637"	7/8"	1.0 oz.	6 oz.
BT-70	19	8019	BNC-70AJ	$2.95	4-1/4"	2.217"	1"	0.85 oz.	6 oz.
BT-101	20	71050	PNC-101	$2.75	12-1/2"	3.938"	3/4"	3.60 oz.	12 oz.

Engine Mounts

Use Estes, high performance engine mounts for your original designs. All engine mounts feature easy-to-assemble instructions and lightweight components.

Engine Type	Prod. No.	Description	Price	Fits	Net Weight Oz.	Ship. Wt. Oz.
For Series I & II Engines – A, B, & C type 0.69" x 2.75"	3150	EH-2050	$1.05	BT-50	0.1	5
	3151	EH-2055	$1.05	BT-55	0.14	5
	3152	EH-2060	$1.05	BT-60	0.17	5
For Series IV Engines – D type 0.945" x 2.75"	3155	EM-5063	$1.35	Saturn V	0.4	5
For T Series Mini-Engines .5" x 1.75"	3153	EM-520	$1.00	BT-20	0.09	5
Special Purpose Quick-Change Conversion Mount – From Series IV Engines to Series I & II Engines	3154	EM-2050	$1.10	BT-50	0.19	5

ESTES
A DAMON COMPANY

Balsa Adapters

Adapters give flexibility for rocket design. Switch from one size body tube to another for payload capsules, parachute compartments, propulsion sections, etc. Any adapter can be hollowed to make a passage for ejection gases. All adapters have at least 1/2" mating surface on each end.

Prod. No.	Description	Price Each	Mates Tubes	Length	Taper Length	Weight in Oz. Net.	Ship.
8031	TA-520	$1.00	BT-5 to BT-20	1.75"	0.75"	0.04	1
8032	TA-550	$1.10	BT-5 to BT-50	2.2"	1.0"	0.06	4
8041	TA-2050	$ .95	BT-20 to BT-50	3.0"	2.0"	0.15	4
8033	TA-2055	$1.25	BT-20 to BT-55	2.5"	1.5"	0.22	4
8034	TA-2060	$1.90	BT-20 to BT-60	3.0"	2.0"	0.20	4
8035	TA-5055	$1.90	BT-50 to BT-55	2.0"	1.0"	0.60	4
8036	TA-5060	$2.30	BT-50 to BT-60	3.0"	2.0"	0.23	4
8038	TA-5560	$2.40	BT-55 to BT-60	2.2"	1.0"	0.25	4
8039	TA-6070	$2.15	BT-60 to BT-70	2.7"	1.5"	0.65	4

Stage Coupler

For multi-staging, joining body tubes, positioning adapter rings, etc. Make perfect guides for cutting body tubes and sanding cut edges of body tubes, too. Ship. Wt. for all is 3 oz. each.

Prod. No.	Description	Price Each	Outside Diameter	Inside Diameter	Length	Fits	Average Weight
3050	JT-5C	$ .60	.513"	.455"	3/4"	BT-5	.020 oz.
3051	JT-20C	$ .60	.708"	.650"	3/4"	BT-20	.027 oz.
3052	JT-50C	$ .65	.949"	.920"	1"	BT-50	.051 oz.
3053	JT-55C	$ .65	1.28"	1.25"	1.3"	BT-55	.088 oz.
3054	JT-60C	$ .65	1.59"	1.55"	1-1/2"	BT-60	.124 oz.
3055	JT-70A	$1.00	2.175"	2.115"	1-1/4"	BT-70	.140 oz.

Nose Blocks

Use these top quality featherweight balsa nose blocks in payload sections and anywhere else a solid bulkhead is required. Precision turned for exact fit in body tubes.

Prod. No.	Description	Price Each	Outside Diameter.	Length	Fits	Weight in Oz. Net.	Ship.
70152	NB-20	$ .75	.710"	3/4"	BT-20	.014	1
70158	NB-50	$ .85	.950"	1"	BT-50	.040	4
70162	NB-55	$ .85	1.283"	1-1/4"	BT-55	.115	4
70164	NB-60	$1.00	1.595"	1-1/2"	BT-60	.190	4

Construction Supplies

Centering Rings

AR-5055 CENTERING RINGS: For centering a BT-50 body tube within a BT-55. Extra strong for "D" engine mounts. Weight 0.062 oz. each. Ship. Wt. 2 oz.
No. 3012 ..... **4 for $1.00**

AR-2050 CENTERING RINGS: For centering a BT-20 body tube within a BT-50. Greater strength makes for use with high thrust engines. Weight per pair .285 oz. Ship. Wt. 2 oz.
No 3100 ..... **10 for $1.30**

Competition Payloads

COMPETITION PAYLOAD: How high can your rocket lift an ounce of lead? This 1 oz. payload weight, 3/4" in diameter, is certified for FAI competition. Ship. Wt. 2 oz.
No. 38292 ..... **2 for $1.00**

Launch Lugs

LAUNCH LUGS: Super-strength laminated launch lugs feature mylar plastic core for durability, paper outer layer for easy gluing. Inside diameter 5/32" fits 1/8" launch rod. Ship. Wt. 1 oz.

1-1/4" long
No. 2321 ..... **12 for $1.10**
2-3/8" long
No. 2322 ..... **10 for $1.25**
8" long
No. 2326 ..... **4 for $1.30**

MAXI-ROD LAUNCH LUG: 2" long, fits 3/16" diameter launch rod.
No. 2328 ..... **4 for $ .95**

Dowels

DOWELS: Extra strong, lightweight seasoned maple dowels. Ship. Wt. 5 oz.

1/8" x 18"
No. 32056 ..... **8 for $ .85**
1/12" x 12"
No. 32058 ..... **8 for $ .85**

Engine Holders

ENGINE HOLDER: Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models. For Regular and "D" engines. Ship. Wt. 1 oz.
No. 3140 ..... **3 for $1.30**

For Mini-Engines, Ship. Wt. 1 oz.
No. 3142 ..... **3 for $1.05**

Paper Adapters

RA-2055 RINGS: 10 rings for centering and mounting BT-20 in BT-55. Ship. Wt. 2 oz.
No. 3111 ..... **10 for $ .95**

RA-2060 RINGS: 10 rings for centering and mounting BT-20 in BT-60. Ship. Wt. 2 oz.
No. 3113 ..... **10 for $1.00**

MULTI-PURPOSE SET: Includes a total of 20 rings for positioning BT-5 in BT-20; BT-5, BT-20, BT-30 in BT-50; and BT-5, BT-20 and BT-50 in BT-60. Also three universal tapered shrouds and instructions. Ship. Wt. 2 oz.
No. 8030 ..... **$1.10**

RA-2050 RINGS: 20 rings for centering and mounting BT-20 in BT-50. Ship. Wt. 2 oz.
No. 3110 ..... **20 for $ .90**

Product Index

—A—
Adapters, Balsa 62
Adapters, Paper 62
Add-On Rod 53
A.L.C.M. Cruise Missile Kit 49
Alien Explorer Kit 38
Alpha Kit 17
Al pha III Kit 18
Alpha III Starter Kit 8
AltiTrak 50
Altitude Computer 50
Andromeda Kit 40
Antares Kit 20
Apogee II Kit 45
A.S.P. Kit 25
AstroBee Kit 18
AstroCam 110 Kit 2
AstroCam 110 Outfit 13
Astron Igniters 56
Astron Launcher 52
Avenger Kit 37

—B—
Bandit Kit 31
Bat Kit, The 16
Battery Clips 53
Beta Kit 25
Big Bertha Kit 20
Big Foot Launcher 52
Big Red Max Starter Outfit 9
Black Brant III Kit 27
Blast Deflector Plate 53
Blue Bird Zero Kit 35
Body Tubes 60

—C—
Cassiopeia, S.S. Kit 41
Centering Rings 62
Challenger I Starter Kit 6
Challenger II Kit 26
Cherokee D Kit 30
Club Programs 54
Cobra 1500 Kit 31
Colossus Kit 35
Comet Kit 21
Competition Payloads 62
Contest, Design 58
Cruise Missile, A.L.C.M. Kit 49

—D—E—
Delta Star Kit 37
Design Contest 58
Designer's Special 51
Dowels 62
Dragonship 7 Kit 42
Eclipse Kit 23
Emergency Repair Kit 54
Engine Blocks 60
Engine Holders 62
Engine Mounts 61
Engines, Rocket 56-57
Estes Aerospace Club 14
Estes Starliner Kit 25
Excalibur, Patrol Cruiser Kit ... 42

—F—G—
Falcon Commander Kit 15
Falcon Commander Starter Kit . 7
Fin Alignment Guide 54
Fin Stock 60
F-61 Starfighter Kit 32
Gamma Kit 21
German V-2 Kit 47
Goblin Kit 44
Gyroc Kit 44

—H—I—J—K—L—
Honest John Kit 47
Icarus Kit 19
Invader, Torellian Kit 39
Javelin Kit 24
Kadet Kit 15
Launch Lugs 62
Launch Rods 53
Launch Rod Safety Cap 53
Little John Kit 23
LTV Scout Kit 45

—M—
Mark II Kit 16
Mars Lander Kit 49
Maxi Alpha III Kit 35
Maxi Alpha III Outfit 12
Maxi Icarus Kit 34
Maxi Rod 53
Mean Machine Kit 34
Mercury Redstone Kit 48
Meteor Kit 17
Micro-Clips 53
Mini-Bertha Kit 22
Mosquito Kit 24
Multi-Roc Kit 45

—N—O—
NASA Space Shuttle Orbiter Kit 33
NASA Space Shuttle Orb. Outfit 11
Nike X Kit 29
Nomad Kit 27
Nose Blocks 62
Nose Cones 61
Nova, Starship Kit 38
Odyssey Kit 28
Orbital Interceptor Kit 32
Orbital Transport Kit 48
Orion Starfighter Kit 39

—P—
Parachute Kits 59
Patriot Kit 26
Patrol Cruiser Excalibur Kit 42
Pershing 1-A Kit 46
Phantom Kit 54
Photon Disruptor Kit 28
Polaris Kit 19
Porta-Pad 52

—Q—R—
Quasar Kit 20
Recovery Wadding 57
Red Max Kit 29
Rigel 3 Kit 43
Rogue Kit 22
Russian SS-1C Scud B Kit 29

—S—
Safety Code 58
SAM-4 Kit 27
SARK Kit 23
Satellite Interceptor Kit 40
Saturn V Kit 50
Scamp Kit 21
School Programs 54
Scissor-Wing Transport Kit 43
Scorpion Kit 36
Scout Kit 16
Scout, LTV Kit 45
Screamer Kit 24
Screw Eyes 59
Scud B, Russian SS-1C Kit 29
Sea Strike "D" Kit 44
Shock Cord 59
Shroud Line 59
Skill Level Chart 4
Skybolt Kit 31
Sky-Hi Kit 37
Sky Hook Kit 18
Sky Raider Kit 30
Sky Tracer Kit 33
Snap Swivels 59
Solar Igniters 56
Solar Launch Controller 53
Space Shuttle Kit ..... Back Cover
Space Shuttle Orbiter, NASA Kit 33
Space Shuttle Orb. NASA Outfit 11
Space Transporter America Kit . 41
Spin Fin Kit 19
Sprint Kit 47
S.S. Cassiopeia Kit 41
Stage Couplers 62
Starblazer X-20 Kit 43
Star Dart Kit 22
Starfighter, F-61 Kit 32
Starfighter, Orion Kit 39
Starliner, Estes Kit 25
Star Probe, World Fed. Kit 38
Starship Nova Kit 38
Starship Vega Kit 42
Star Speeder Kit 32
Stiletto Kit 28
Streak Kit 16
Streamer Material 59
Super Flea Kit 24

—T—U—V—
Tape Discs 59
Tape Strips 59
Tartar Kit 46
Technical Reports 59
Teros Kit 26
The Bat Kit 16
Torellian Invader Kit 39
Vega, Starship Kit 42
Vigilante Kit 37
Vindicator Kit 41
V-2, German Kit 47

—W—X—
Wizard Kit 15
World Fed. Star Probe Kit 38
X-15 Starter Kit 10
X-Ray Kit 17

Other Damon Companies:

hi-flier
SINCE 1922

A DAMON COMPANY
Hi-Flier Manufacturing Co., Inc.
510 East Wabash Avenue, Decatur, IL 62525 – 217-429-4361. Manufacturing plastic and paper kites, cord, reels, gliders and sport kites.

arrow®

A DAMON COMPANY
Arrow Industries, Inc.
(Formerly Arrow Handicraft Corp. & Tarco Inc.)
900 W. 45th Street, Chicago, IL 60609 – 312-927-2000
Manufacturing craft kits, wood dollhouse kits, X-mas ornaments, ball clocks, gumball banks, novelty banks, "Magic Rocks" and "Wheelo".

DAMON

Damon Corporation
80 Wilson Way, Westwood, MA 02090 – 617 - 449 - 0800

★ ★ ★ ★ ★

Printed by The A. B. Hirschfeld Press, Denver, Colorado U.S.A.

SKILL LEVEL 4

Model Rocketry's First Scale

space shuttle

So Realistic, That From A Distance, You'd Swear It Was The Real Thing!!

(Engines, launch system, glue, and finishing supplies are not included in this kit.)

ASTONISHINGLY REALISTIC RECOVERY SYSTEM! Space Shuttle and Booster Rockets seperate in space! Boosters return to earth via giant 18"recovery 'chute, while orbiter glides home!

Dramatic 1/162nd scale reproduction of America's newest space vehicle. Designed as a reuseable near space transportation system with satellite deployment and retrieval capability. Delivers really spectacular flights. Semi-scale orbiter employs glide recovery just like the real thing while boosters and external tank return via 18" parachute recovery. Our model features special stabilizer fins for atmospheric flight which remove easily for display. Kit components include injection molded, vacu-formed plastic and die-cut parts. Incredible display model with authentic NASA decor.
Shuttle Length: 13.6" (34.5 cm) Dia. 2.04" (51.8 mm) Orbiter Length: 9.0" (22.9 cm) Orbiter Wingspan 7.1" (18.9 cm) Wt. 4.37 oz. (124 g). Ship. Wt. 16 oz.
ENGINES: C5-3 (1st Flt.) C6-3

No. 1284 . . . ONLY $13.00

ESTES INDUSTRIES
PENROSE, CO 81240 USA

Estes products distributed in Canada by: HOBBY INDUSTRIES, 24 Ronson Drive, Rexdale, Ontario M9W 1B4

-IMPORTANT INFORMATION-
Please Read!

-ATTENTION PARENTS, TEACHERS, AND ROCKETEERS-

Please do not be alarmed by the placement of the label illustrated below on shipping cartons containing model rocket engines. When used as directed, Model Rocket Engines "ARE SAFE", and have produced an excellent Safety Record. This label is technically required by law. Please note that "Flammable Solid" label is required only for the transportation of the product and that model rocket engines are considered less of a hazard than model airplane fuel or aerosol paints.

-DON'T MISS A MAILING-

In order for you to receive all Estes mailings be sure to order at least $5.00 worth of merchandise every 6 months. This will assure that your name will be retained on our active mailing list.

-SHIPPING INFORMATION-

The following information is provided in accordance with the requirements set forth in Trade Regulation Rule 435, promulgated by the Federal Trade Commission, effective February 2, 1976.

We normally ship within 72 hours of receipt of your order. On occasion, a product may be temporarily out of stock, in which case we will notify you within 30 days that there will be a delay. Your order will then be filled as soon as possible, but in no event later than 90 days from receipt of your order.

-A SPECIAL MESSAGE TO ESTES CUSTOMERS-

From time to time Estes Industries makes the names and addresses of its customers available to other companies who produce other products you may be interested in. This means that you may be receiving advertising and sales literature from these companies in your mail. If you do not wish your name and address to be used in this manner, please contact Estes Industries Customer Service Department, Penrose, Colorado 81240.

ATTENTION CALIFORNIA RESIDENTS

To receive model rocket engines by mail order in California, you must be aware of the following conditions and fulfill several simple requirements.

1.) To receive 1/4A through C type engines you must be at least 14 years of age and have a "Statement of Age Certificate" on file with Estes Industries.
2.) To receive D engines you must be at least 18 years of age and have a "Statement of Age Certificate" on file with Estes Industries.
3.) If you are not old enough to receive the type of model rocket engines you wish, please have one of your parents send your order in for you. Remember they must also have a "Statement of Age Certificate" on file with Estes Industries.
4.) You need to file a "Statement of Age Certificate" only once. Fill out and send in the certificate below now to assure the rapid handling of all your future orders.
5.) To launch, an individual must secure authorization (either written or verbal) from the fire authority having jurisdiction over the area he plans to use as a launch site.
6.) No additional consumer permit to purchase or use model rocket engines is required.

Copies of the State of California Model Rocket Regulations may be obtained upon request by writing either of the following:

Estes Industries
Customer Service Department
Penrose, Colorado 81240

or

Chief Albert E. Hole
California State Fire Marshal
1215 "O" Street, Room A101
Sacramento, California 95814

CALIFORNIA STATEMENT OF AGE CERTIFICATE

Name _____ **Date** _____

Address _____ **City** _____

State _____ **Zip** _____ **Phone (** ____ **)** _____

In order to receive model rocket engines in California, please check one of the following boxes and sign.

☐ **(A) I am 14 years of age, but not yet 18.**

☐ **(B) I am 18 years of age or older.** **Rocketeer Signature** _____

Parent Signature _____

NOTE: Certificate need be filed only once. **(Must be signed if box "A" is checked)**

Send to: **Estes Industries**
Order Processing Dept.
Penrose, Colorado 81240
or include with your next order.

ATTENTION OREGON RESIDENTS

Model rockets can be flown in Oregon, however, there are restrictions imposed by the State Fireworks code and enforced by the Oregon State Fire Marshal. Estes Industries can sell engines only to holders of valid permits. Permits to purchase and launch model rocket engines can be obtained by any responsible adult by requesting an application from the Oregon State Fire Marshal, Chief Deputy, 103 Labor & Industries Bldg. Salem, OR 97310.

As soon as you receive your permit, please send us a copy to keep on permanent file. All orders for engines must be placed in the name of a permit holder.

If you are not yet an adult yourself, your parents, teachers, etc. can obtain permits and can purchase engines for you.

ATTENTION WASHINGTON RESIDENTS

On September 10, 1979, new Washington State Model Rocketry Regulations went into effect. Under the new Washington Administrative Code 212.20 there is NO age or licensing requirement to purchase or use model rocket engines. Please check with your local authorities for approved launch sites. For a copy of the new regulations write: Estes Industries Customer Service Dept., Penrose, Colorado 81240 or State of Washington, Office of the State Fire Marshal, Insurance Building, Olympia, Washington 98504.

ATTENTION MASSACHUSETTS AND RHODE ISLAND RESIDENTS

According to your state model rocketry regulations, you are required to obtain a permit from your local fire or safety authority in order to purchase and use model rocket engines.

As soon as you receive your permit, please send us a copy to keep on permanent file. All orders for engines must be placed in the name of the permit holder. For a copy of Massachusetts regulations write for: FPR Fire Prevention Regulation #15, State Book Store, State House, Room 116, Boston, Massachusetts 02133. (Include 30¢ for copy and postage.) In Rhode Island, write: Rhode Island State Fire Marshal, 12 Humbert Street, North Providence, Rhode Island 02911 c/o William McVey, Chief of Technical Services.

ATTENTION NEW JERSEY RESIDENTS

In accordance with Safety Regulation No. 24 of the New Jersey Department of Labor and Industry, Estes Industries can sell engines only to holders of valid permits. These permits are issued to any adult who will assume full responsibility for the safe handling and use of model rocket engines, including the purchase of them.

To obtain a permit first write to the State of New Jersey, Department of Labor and Industry, Bureau of Engineering and Safety, Box 709, Trenton, New Jersey, 08625, and request an application form for a model rocket engine permit. The fee for a permit is two dollars. DO NOT SEND THE PAYMENT until you return the completed application form to the Department of Labor and Industry. You will receive more complete information on the procedures to follow when you receive the application form.

As soon as you receive your permit, please send us a copy to keep on permanent file.

If you are not yet an adult yourself, your parents, teachers, etc. can obtain permits and can purchase engines for you.

ATTENTION CANADIAN RESIDENTS

Please send all orders for Estes products to: Hobby Industries, 24 Ronson Drive, Rexdale, Ontario, M9W 1B4. As prices are different in Canada you should request a Canadian Price List and Catalog from Hobby Industries

ATTENTION FOREIGN ORDERS

Due to restrictive International Air Mail Regulations, we are not able to ship our model rocket engines to any international or APO address.

ATTENTION ROCKETEERS !

Please remember that modelers such as yourself must obey the laws and regulations of your city, county, and state if model rocketry is to advance and current restrictions are to eventually be lifted. Only thru maintaining an excellent safety record can this take place. We feel we have the safest, most complete educational model rocketry program available, however, occasionally antiquated fireworks laws and misinformed individuals interpret model rocketry as requiring strict regulations, which it does not need or deserve.

We at Estes Industries promise to continue our efforts to inform the misinformed and to separate model rocketry from the misconception that it should be treated like fireworks, which it is not. Your compliance with existing laws will assist us in pushing model rocketry ahead for less restriction in the future. Also, remember that experimenting with home-made propellants is far too dangerous to attempt. Stay within the law – stay alive.

Sincerely,
ESTES INDUSTRIES

Vern Estes

Vern Estes, President

FREE GOODIES FOR YOU!

Free Plans

All orders received on even numbered months (February, April, June, etc.) are returned with a "Free" model rocket plan to help increase your Estes fleet. These "free plans" feature a variety of designs from single-stage sport models to far-out exotic rockets you will be proud to display. All "free plans" can be constructed from the Estes high performance parts and accessories listed in our catalog.

Free Iron-Ons

All orders received on odd numbered months, (January, March, May, etc.) are returned with a "Free" iron-on decal for your t-shirt, windbreaker, or range jacket. These iron-ons feature a variety of super-neat designs. You iron it on right at home to any surface containing 50% or more polyester.

National Association of Rocketry

Don't miss out on the fun! JOIN TODAY

NAR MEMBERS RECEIVE ALL THIS:

- **Model Rocketeer Magazine** — 12 issues of the exciting monthly magazine crammed with the latest in rocketry!
- **The Competition Handbook** — Win using this 28 page guide prepared by National Champion Rocketeers!
- **The NAR Pink Book** — 68 page rule book for over two dozen rocketry contests!
- **NAR Sporting License** — Impressive ID card identifying you as an official NAR member, with your own registered number!
- **NAR Decals** — Official decals set your models miles above the rest!

ALL NAR MEMBERS ARE ENTITLED TO:

- **$1,000,000 Liability Insurance** — Liftoff with added peace of mind in the world's safest hobby!
- **Join NAR Clubs** — Explore a universe of fun with other rocketeers in NAR clubs all over the country.
- **Attend NARAMS** — Spend an unforgettable week at the most exciting rocketry event; the NAR Annual Meet where rocketeers fly and compete from all over!
- **Set National and World Records** — Prove that you're the best and receive official recognition from the highest authorities.
- **Member Services** — Exclusive free and low cost items, such as manuals, booklets, plans, patches, special offers and more!

NAR

Membership Application

NATIONAL ASSOCIATION OF ROCKETRY
182 MADISON DRIVE, ELIZABETH, PA 15037
Dept. E-81

This flyer is provided courtesy of your model rocket manufacturer. Application with membership fee and all information requests should be sent directly to the NAR.

MEMBERSHIP CATEGORY — Check One Only!

____ JUNIOR MEMBERSHIP (Under 16 as of January 1) ..... $ 9.00
____ LEADER MEMBERSHIP (Under 21 as of January 1) $12.00
____ SENIOR MEMBERSHIP (21 or over as of January 1) $16.00

OPTIONAL MEMBERSHIP SERVICES — In addition to above fees.

____ $1,000,000 liability protection while flying model rockets ..... $ 4.00
____ FAI Stamp for team programs and international records ..... $ 2.00

DATE OF BIRTH: Mo.____ Day____ Yr. ____ AMOUNT ENCLOSED _____

NAME _____ DATE _____

ADDRESS _____ CITY_____ STATE____ ZIP_____

☐NEW ☐RENEWAL (number_____, section no. _____) ☐ Please send more information

$4.00 of your membership dues goes toward a subscription to Model Rocketeer Magazine. This is not an Estes product. NAR membership fee cannot be counted toward minimum order for bonus or special coupons.

WORTH $2.50

BONUS BUCK

WORTH $2.50 Toward Your Next Order Over $17.50

Or Can Be Redeemed For One FREE! NOMAD SURFACE TO SURFACE MISSILE

On Your Next Order Over $17.50
Be Sure To Include Bonus Buck With Order Form. Limit one Bonus Buck per order.

WORTH $5.50

Check ONE Box:
☐ My order is over $17.50, please take $2.50 off my total order. #7724
☐ My order is over $17.50, please send me a "FREE" Nomad #7723

ESTES INDUSTRIES
PENROSE, CO 81240 USA

Expires 8 - 1 - '81

WORTH $2.50 BONUS BUCK

Coupon redeemable only direct from Estes.

WORTH $1.00

Get The Most Out of Model Rocketry..

Join The estes aerospace club

... AND BECOME A MEMBER OF THE MOST EXCITING ROCKET CLUB ON EARTH.

Your official membership kit includes:
- Viper Rocket
- Membership Certificate
- Decal Sheet
- Club Emblem
- EAC Stationery
- Range Box Stickers
- EAC Product Bulletin
- Model Rocketry Technical Manual
- Copy of Model Rocket News
- All This When You Join The ESTES AEROSPACE CLUB!

Ship. wt. 9 oz. Regular Membership (#1447) $5.00

Send in this coupon with the enclosed order form. We'll rush you this big membership kit for ONLY $4.00 #7722

SEE PAGE 14 OF THE 1981 ESTES CATALOG

Expires 8 - 1 - '81

ESTES

WORTH $1.00

Coupon redeemable only direct from Estes

ESTES
A DAMON COMPANY

ESTES INDUSTRIES
PENROSE, CO 81240 USA

BULK RATE
U.S. POSTAGE PAID
ESTES INDUSTRIES

359F

KEVIN BROWN
2059 MAPLEWOOD LN
LIMA OH 45806

ESTES ORDER FORM

ESTES INDUSTRIES, PENROSE, COLO. 81240

	Cat. No.	Qty.	Product Description	Unit Price	Total
1	#1447	☐	EAC Membership Kit		
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					

PLEASE PRINT PLAINLY IN INK
(If additional space is needed use a separate sheet of paper.)

_____
ORDER DATE
EFFECTIVE 9-1-'80

Merchandise Total
Priority Postage (If Desired) / State Sales Tax 3% (Colo. Residents Only)
Add $1.50 For Handling
Amount This Order
Add Balance Due Estes Ind. From Previous Order
Subtract Previous Order Credit (Credit Slip(s) Enclosed)
TOTAL PAYMENT ENCLOSED

Send a Friend a Catalog.

☐ I am an "Active" EAC Rocketeer.

MOVED RECENTLY? If you have moved since your last order please give us your old address.

NAME _____
ADDRESS _____
CITY _____ STATE ____ ZIP _____

400A
364K
363K
362H
361H
360F
359F

Please Print Name And Address Below Unless It Appears On Label. Correct Address On Label If Necessary.

Your Name _____
Address _____
City _____
State _____ ZIP CODE _____
PHONE ( ) _____ Birth Date ___/___/___
mo. day yr.

For Estes Use Only
1 ____ EAC ____
2 ____ 3 ____

☐ Please rush a "New" ESTES Model Rocketry Catalog to:
Friend's Name _____
STREET _____
CITY _____
STATE _____ ZIP _____ Dept. 50A

☐ Please rush a "New" ESTES Model Rocketry Catalog to:
Friend's Name _____
STREET _____
CITY _____
STATE _____ ZIP _____ Dept. 50A

903,028B

Be Sure To Enclose Special Offer Coupons

_____
_____
_____

Place Stamp Here

ESTES INDUSTRIES
"Model Rocket Capitol of the World"
PENROSE, CO. 81240 USA

HOW TO ORDER — FOLLOW THESE EASY STEPS FOR BEST SERVICE

This order form replaces all previous order forms. Please be sure that you use the correct and full catalog number for each item when you order. All prices are subject to change without notice. WHEN SENDING ORDER BE SURE TO GIVE ZIP CODE IN YOUR ADDRESS.

POSTAGE

Estes Industries ships all retail orders POST-PAID in the U.S. by regular land mail, UPS, or by the customer's choice of carrier. If the customer requests a carrier other than regular land mail he will be charged for any additional shipping costs.

PAYMENT ON ORDER

Full payment must accompany all orders. Please send all remittances by either check or money order, both for your protection and our convenience. If you do send currency, be sure your envelope has sufficient postage, is properly sealed, and is addressed correctly to assure delivery. Coins should be attached to a separate sheet of paper, not to the order blank. Use a single strip of masking tape to hold the coins in place. Avoid the mailing of coins, as they are easily lost in the mail. We cannot assume responsibility for the loss of coins, currency, or orders in the mail. Remember to include sufficient funds with your order. For your protection, we do not ship orders C.O.D. Proper attention to these details will result in speedier service for you.

IMPORTANT

Estes model rocketry products are recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age when flying model rockets.

Your order may, for various reasons, have to be shipped in more than one package. If all of your order does not come at the same time, please be patient, give the Post Office, U.P.S., or freight company a few days to mix things up and sort them out again.

NOTE: All foreign orders require additional postage. Please write for more information on postage and mailing restrictions.

PRIORITY MAIL (Air Mail) SERVICE

While Estes Industries specializes in fast service, sometimes extra speed is necessary. The Post Office offers a service called Priority Mail which gives packages and parcels the fastest handling and transportation possible. PRIORITY MAIL CANNOT INCLUDE MODEL ROCKET ENGINES, AS ORDERS CONTAINING ENGINES CAN ONLY BE SHIPPED BY PARCEL POST AT THIS TIME.

For other items on which you desire **extra** rapid delivery, additional postage may be included for Priority Mail. Shipping weights are given on all items. Total up the **shipping weights** on the items you are ordering, then find the amount to allow for extra postage on the chart below. When your order is processed you will be charged only for the difference between regular parcel post and priority mail - any excess will be refunded.

WEIGHT (UP TO BUT NOT OVER)	10 oz. to 1 lb.	2 lbs.	3 lbs.	4 lbs.
Allow →	$ .80	$1.13	$1.51	$1.93

5 lbs.	6 lbs.	7 lbs.	8 lbs.	9 lbs.	10 lbs.
$2.48	$3.13	$3.73	$4.33	$4.93	$5.53

For orders 9 ounces or less, send 9¢ per ounce.

ESTES. A DAMON COMPANY — FULL ONE YEAR WARRANTY

Your Estes product is warranted against defects in materials or workmanship for one year from the date of the original purchase. Any Estes product which, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period will be repaired or replaced, at Estes' option and at no charge to you, provided it is returned to Estes with proof of purchase.

This warranty does not cover incidental or consequential damage including injury or damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions or improper storage of the warranted product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For repair or replacement under this warranty, please return the defective part of your Estes product with proof of purchase to: Estes Industries, Customer Service Department, Penrose, Colorado 81240.

"Estes is an equal opportunity employer."

TEAR HERE AND INSERT IN ENVELOPE

Thank you for ordering

TEAR HERE AND INSERT IN ENVELOPE

FOLD HERE AND SEAL

HAVE YOU ORDERED EVERYTHING YOU NEED? IS YOUR MONEY ORDER OR CHECK ENCLOSED?
DID YOU CHECK YOUR MAILING ADDRESS AND ZIP? DON'T FORGET TO SEND A FRIEND AN ESTES CATALOG!

–HELP US TO SERVE YOU BETTER–

Your comments will assist us in providing you with better service and even more exciting products.

1. What types of scale models would you like to see Estes produce? _____

_____

2. Do you prefer ☐Large or ☐Small size models?

3. Do you think Estes kits are generally ☐Easy, ☐Average or ☐Difficult to assemble considering their recommended skill level?

4. Are Estes kit instructions easy to follow? ☐Yes ☐No

5. Would you prefer more plastic parts for simplier assembly and better detail? ☐Yes ☐No

6. What Skill Level of kits do you prefer to build?
☐1 ☐2 ☐3 ☐4 ☐5

7. My three favorite types of model rockets are (Mark 3 boxes):
☐Single Stage ☐Sport Flier ☐Mini-Brute ☐"D" Powered ☐Scale Model ☐Interplanetary Voyager ☐Multi-Stager ☐Payload ☐Boost Glider ☐Maxi-Brute

8. I became interested in model rocketry because of:
☐a friend ☐school ☐rocket club ☐article ☐TV ☐other _____ ☐film ☐magazine ad ☐saw a launch ☐comic book ☐gift ☐hobby shop ☐department store

9. My favorite type of scale model is:
☐Military Scale ☐NASA Scale ☐Sounding Scale

10. What product other than model rockets would you like to see Estes produce:
☐Electric RC Cars/ ☐Kits ☐Pre-Assembled
☐Powered Boats/ ☐Kits ☐Pre-Assembled
☐RC Airplanes/ ☐Kits ☐Pre-Assembled
☐U-Control Airplanes/ ☐Kits ☐Pre-Assembled
☐Solar Kits
☐Slot Racing ☐HO Scale ☐1/32nd. Scale
☐Other _____

11. Age ____ Grade ____ **12.** ☐Male ☐Female

— THANK YOU FOR YOUR ASSISTANCE —